HOARD'S DAIRYMAN

SEPTEMBER 25, 1956

THE NATIONAL DAIRY FARM MAGAZINE

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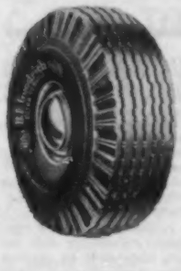

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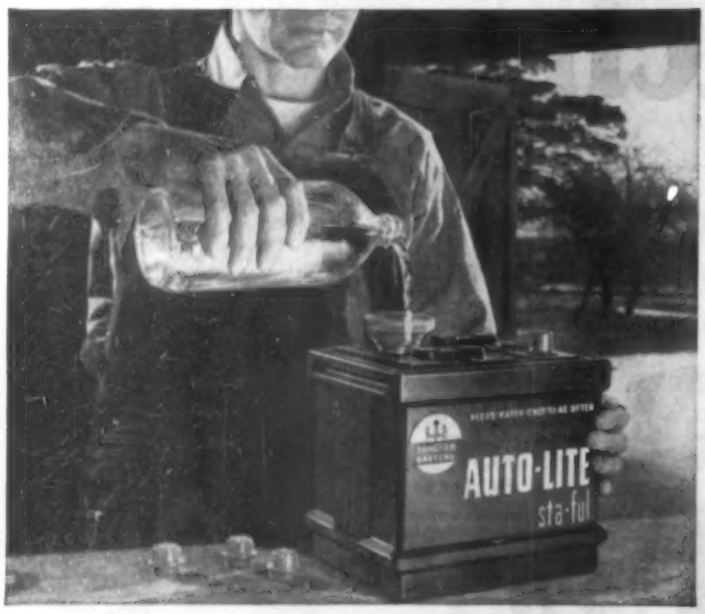

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HOARD'S DAIRYMAN

The National Dairy Farm Magazine

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COVER PICTURE

The appealing picture featured on the cover of this issue was taken on the farm of Lloyd Miller, Elizabethtown, Penn. The 92-acre farm is owned by Mr. Miller's father. The 10-cow Holstein herd is the nucleus of a general farming operation, which includes beef feeding and poultry operations. Reflecting the good management of the small herd is an average milk production of approximately 11,000 pounds per head last year.

Photo by Grant Heilman.

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The receipt of Hoard's Dairyman is notification that money on subscription has been received. The label on paper will show date to which subscription is paid. Changes of address should reach us three weeks in advance. Include old address.

Unwholesome, immoral and questionable medical advertising is excluded. A sincere effort is made to carry advertising of only reliable people. We will always take it as a favor to be notified promptly whenever any advertiser's dealings with the subscribers are not in good faith or evidence a lack of business honor. Advertisers recognize the readers of Hoard's Dairyman as an up-to-date class of farmers, and we hold our columns for the patronage of only those with whom our readers can deal with profit and satisfaction.

Hoard's Dairyman is published on the 10th and 25th of each month. Advertising copy for the 10th of the month issue must be received before the 15th of the preceding month. For the 25th of the month issue, copy must be received by the 1st of that month.

Washington Dairygrams

DAIRY LEADERS ENCOURAGED BY FARM PLANKS OF BOTH POLITICAL PARTIES. IN CHICAGO, DEMOCRATS MENTIONED DAIRY PRODUCTS SPECIFICALLY FOR FIRST APPEARANCE IN A PARTY PLATFORM. MEANING OF PLANK STILL CONFUSING, HOWEVER. ADVOCATES "EXTENDING" PRICE SUPPORTS TO DAIRY PRODUCTS WHEN THEY ALREADY HAVE PRICE SUPPORTS. INDICATION OF POSSIBLE USE OF DIRECT PAYMENTS. REPUBLICAN FARM PLANK IS FIRST TO SPECIFICALLY APPROVE THE PRINCIPLE OF SELF-HELP, WHICH GIVES ENCOURAGEMENT TO NATIONAL MILK PRODUCERS FEDERATION AND OTHER GROUPS WANTING A PRODUCER SUPPORTED AND CONTROLLED PROGRAM.

CONGRESS AT WORK DURING ADJOURNMENT. HOUSE AGRICULTURE COMMITTEE INVESTIGATING LIVESTOCK SLAUGHTER TO OBTAIN DATA ON HUMANE METHODS. SENATE COMMITTEE STUDYING PRICE SPREADS, INCLUDING DAIRY PRODUCTS.

POSSIBLE FREIGHT RATE INCREASE TO BE FACED BY FARMERS AS INTERSTATE COMMERCE COMMISSION CONSIDERS SWIFT APPROVAL OF REQUEST FOR INCREASE MADE BY EASTERN RAILROADS. IF GRANTED, OTHER AREAS WILL ALSO REQUEST INCREASES.

ANIMAL DISEASES IS TITLE OF NEW 1956 YEARBOOK OF AGRICULTURE. AVAILABLE AT $2 EACH FROM SUPERINTENDENT OF DOCUMENTS, GOVERNMENT PRINTING OFFICE, WASHINGTON, D. C.

FARM EQUIPMENT PRICES UP AS MANUFACTURERS PASS ON HIGHER COSTS RESULTING FROM HIGHER STEEL PRICES AND WAGE INCREASES. INVENTORIES HIGH, HOWEVER, AND SOME FACTORIES CURTAILING PRODUCTION.

★ ★ ★

In YOUR next issue!

QUESTIONS WE RECEIVE ON MASTITIS . . . Our veterinary editor has prepared an interesting and revealing story on this troublesome disease, based on questions you have asked. Don't miss it!

VENTILATION REQUIRES MORE THAN JUST A FAN . . . An agricultural engineer presents a detailed article on the reasons for a ventilation system the way it should be installed.

SOME POINTERS ON FEEDING MILK . . . Nat Allen's feeding column will be especially valuable to all dairymen since it covers various methods of feeding milk to calves, the amount to feed, and the advantages of each system.

DRESS UP YOUR FARM YARD WITH FLOWERS . . . The final article in our landscaping series includes recommendations, with illustrations, on a flower border.

AND MANY MORE . . .

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Fort Atkinson, Wisconsin

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★ **NON-SIPHONING** — Can't back-siphon. Officially tested and conforms to Item 11r, Section 7 of the Milk Ordinance and Code. (1953 Recommendations U. S. Public Health Service.)

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- ✔ protecting equipment stored outdoors
- ✔ lining poultry houses, etc.
- ✔ lining "temporary" fence silos

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Opinions, Brickbats, Bouquets

These columns are open to the readers of Hoard's Dairyman for the expression of their opinion on any subject, whether radical or conservative, destructive or constructive, wise or foolish, critical or commendatory. Hoard's Dairyman assumes no responsibility for opinions expressed.

Editorials heartening

It was indeed heartening to read on the editorial page of your July 25 issue so much that is pertinent to the dairy industry and so ably stated.

No dairy unit, however large or small, can have the assurance of success without the knowledge obtained by testing. How else can you tell if an individual cow in your herd is helping to keep you or if it is you keeping her?

May I suggest that for your lesson today, turn to page 726 of the July 25 issue and study it in its entirety. You will, won't you?

New Jersey — LES LEONARD

To be a good neighbor

Sometimes I wonder if folks know that we are living in a free country. My neighbor is free to his own way of living. As long as he pays his taxes and bills, he is under no obligation to please his neighbor as far as this country is concerned.

But some people are not satisfied unless they see all their neighbors' faults, all the wrong things they do. I have a neighbor who lives off of old age assistance and has nothing to do but sit and watch me, find all my faults, and then go and tell all my other neighbors. Of course, he has a way of stretching the truth. I don't find any fault with him for the way he lives or what he does with his time.

His lies have cost several hundred dollars a year. First it causes other people to doubt me or fear to trust me when I need help. I am not angry with him. If he came and asked a favor of me, I would help him. But I wouldn't want to do as he does.

In this world we are to love our neighbor as ourselves. If we all had this love, this world would be a swell place in which to live.

Dollars and cents are nice to have but good neighbors are a lot nicer to have.

Pennsylvania — T. W.

We are on way out

You get too many radical letters from people who do not look at the problem from a business statement basis. On such a basis, the farmer gets to keep about 25 per cent of his gross income for his labor, management, and investment. I know, from 20 years of farm bookkeeping and analysis, that I can satisfactorily operate my farm for 50 cents per hour labor (or $2,000 for each full-time member of the family employed), and 3 per cent interest on our investment.

Since we have a large farm and can employ two full-time members of our family, we need $4,000 per year for labor and $2,000 per year for 3 per cent interest on our investment, making a total of $6,000 which equals 25 per cent of our gross income, or a gross income of $24,000 per year.

Under normal conditions this is as cheap as any farmers will work. We made satisfactory progress until desperate farmers would produce cheaper during the last three years because they did not know what else to do and did not want to lose their farms.

At 75 per cent of parity we lost all of our labor, but parity has now come back to about 85 per cent.

The farmer is adjusting himself to more economical production, and, I think, we are on the way out of this seven-year adjustment period.

If the farmers do not turn to better farm management and farm bookkeeping; and the college extension divisions, agriculture departments, and U.S.D.A. do not develop a sounder system of agricultural management appraisals so our economists will know in less than three years what is happening, we will have many hard years yet.

Oklahoma — GLENN SCHNEIDER

"Parity" cannot be a one-way street

Your editorial, "The price of bread," and its economic conclusions warrant some pointed comments.

Consider these economic truths:

1. "Parity" is a historical concept, a relationship that existed in some past period. For this reason, it is artificial rather than actual and only coincidentally fits a given set of current economic factors. It is an acknowledgment of economic inequity, but not a correction of it. The farmer merits and needs current economic parity, not historical parity.

While farm prices are adjusted to a historical period, labor continues currently and substantially to alter the price relationships upon which the historical parity is based. In general, "parity" represents an attempt to separate the agricultural economy from the whole economy and to shore it up artificially and independently.

This is an utter and complete impossibility because a flourishing national economy operates as an organic entity. It is a free and fluid flow of economic goods and services. Historical "parity" serves only to introduce rigidities that are antithetical to the forces by which the economy thrives.

2. The factors of production are determined by the world we live in; they are not subject to human choice. These factors are labor, capital, management (otherwise known as enterprise). The rewards these factors receive, likewise, are determined over the long run by economic relationships that are altered only slowly, if at all, and are similarly beyond the power of human determination.

"I want to talk to him next time. He must have quite a line!"

These factors represent a three-horse team and each is vitally essential to the propulsion of an adequate and growing economy. Let one of them falter and the other two suffer accordingly.

Let's look at these factors. Labor these days is receiving larger and larger shares of the rewards of economic effort. Why?

Because labor is sharing to an ever-greater extent in the rewards of capital. Mechanical power—machines—have made high wages possible, and power and machines are capital. Labor, before mechanical horsepower became available, had to be content with subsistence wages.

Labor power alone, unaided by machines, has never been able to increase its productivity. With steadily improving and expanding machines and facilities, labor is able to increase its productivity and, of course, its wages. But this reward for increased productivity is, in effect, a sharing of the earnings of capital, not of labor alone.

Management (enterprise), as distinguished from capital, is receiving diminishing rewards because of the trend which has been termed "creeping socialism." When these rewards become too low, and enterprise is no longer economically attractive, the other factors of production and the whole economy, suffer as in England today.

The last, but not the least, is capital which, in its broad sense, means tools and materials. Capital is the wheel horse without which nothing in our modern civilization would move. Capital receives and is entitled to first claim on the rewards of economic efforts. High taxes, however, have taken away much of the rewards and much of the incentive for the accumulation and use of capital.

All this is preliminary to the object of locating the farmer in this economic framework. First of all, the farmer is a businessman; a capitalist, if you please. He has no means whatever of forcing a direct increase in the reward for his labor. He is solely responsible for the operation of the productive plant by which he earns his livelihood.

His land, buildings, and machinery fall in the broad category of capital. His farm also requires management to be productive — management of land, crops, resources. Hence, the farmer's economic efforts belong to the two categories, capital and management (enterprise), which have been penalized most by "creeping socialism."

What are the prospects of the farmer receiving an equitable division of the rewards of economic effort?

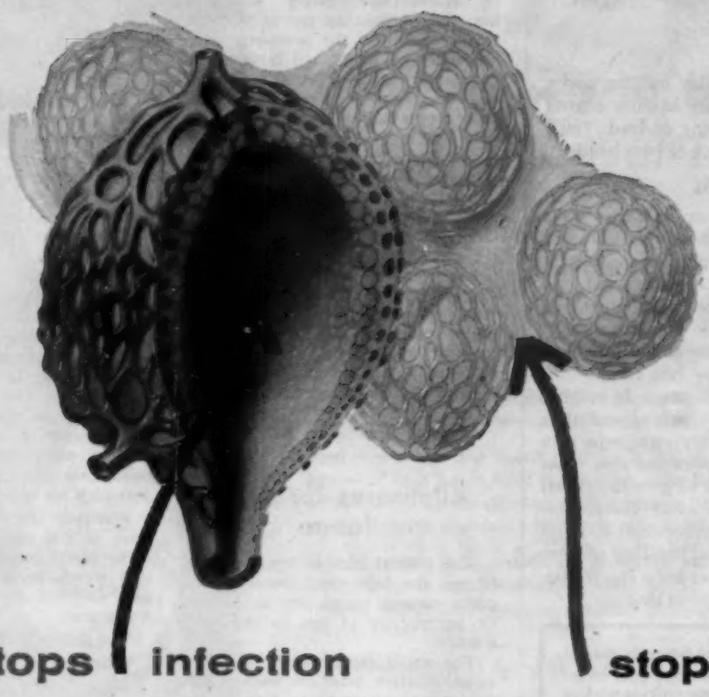
This is partly answered by the farmers themselves who are mechanizing their operations and, like the industrial worker, are thereby receiving as part of their reward a return on capital as well as a return on their labor.

When it comes to the commodities, the economic goods the farmer produces, however, that is another story. Farm commodities are capital just like all other raw materials, and the rewards received for producing materials are being usurped in part at the present time by labor. By virtue of the monop-

(Continued on page 896)

Protect dairy profit with *greatest advance* in mastitis treatment in 9 years!

new! Teatube®-CORBIOT



Available from your druggist or veterinarian in 10 Gm. tubes

stops infection

CORBIOT attacks infection inside the alveolus, where the milk is made. There are thousands of these tiny glands throughout the udder. To reach infection inside each alveolus, a mastitis remedy must:

1. be able to mix with the milk;
2. have strong germ-killing action;
3. be gentle to these sensitive tissues;
4. be able to attack *any* of the germs usually found in mastitis.

Corbiot meets all these specifications —and more!!!

This combination of *3* antibiotics (neomycin, polymyxin, and penicillin) *with hydrocortisone* in the special milk-miscible suspension offers a new way to protect milk production when mastitis strikes.

stops inflammation

CORBIOT lessens inflammation by the action of HYDROCORTISONE on the tissue between the alveoli. Hydrocortisone is the most powerful of the natural anti-inflammatory hormones.

When the udder tissue is inflamed by the presence of mastitis, there is interference with the flow of blood through the small blood vessels to each alveolus. Thus, the raw materials of which milk is formed do not reach the alveoli in normal amounts, and milk production tends to fall off.

The hydrocortisone in CORBIOT acts to relieve this inflammation and thereby helps to preserve milk flow. Also, by relieving inflammation, CORBIOT helps prevent the formation of scar tissue, which is the cause of the knots and lumps found in permanently damaged quarters.

Corbiot is the ***first*** *mastitis product combining* **hydrocortisone** *and* **triple antibiotics** *to stop* ***both*** *the infection and inflammation of mastitis.*

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Your veterinarian is your first line of defense against animal diseases. Consult him in regard to animal health problems

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Ideas for Planning Your Milking Parlor

How many stalls will you need . . . which type of stall is best for your operation . . . how much time and work can you save? The answers to these and other questions are given here.

by Joe Clay

A GOOD, well-planned milking parlor can be a real time and work saver for dairymen. But, like every other phase of modernization, you can't jump into a milking parlor without planning. These tips on the organization of a modern, efficient parlor can save you money and help avoid problems you might have to face twice a day, 730 times a year.

Eight minutes per cow . . .

In your new milking parlor, allow about 8 minutes per cow—including feeding time. That means you'll milk 7½ cows an hour per stall, with one operator. Here's how to decide how many stalls you'll need for greater efficiency:

With two stalls, you'll milk 15 cows per hour. Three stalls allow one operator to milk 22.5 cows in an hour. Four stalls and one man can manage 30 milkings per hour. Six stalls need two operators, but you'll milk 45 cows per hour. With two more stalls, plan on 60 cows per hour from two men. That's milking *and* feeding, too.

The secret of this time and labor saving is simply that cows bring the milk to you. Then, too, with a milking parlor, the udder is elevated—at the best working level. With levers, feeding mechanism and washing equipment within a few steps, you'll cut hours a day from the milking chore.

With the new Clay milking parlor stalls, easy-to-operate handles control mixing and measuring of feed. You'll feed cows with a flick of your hand.

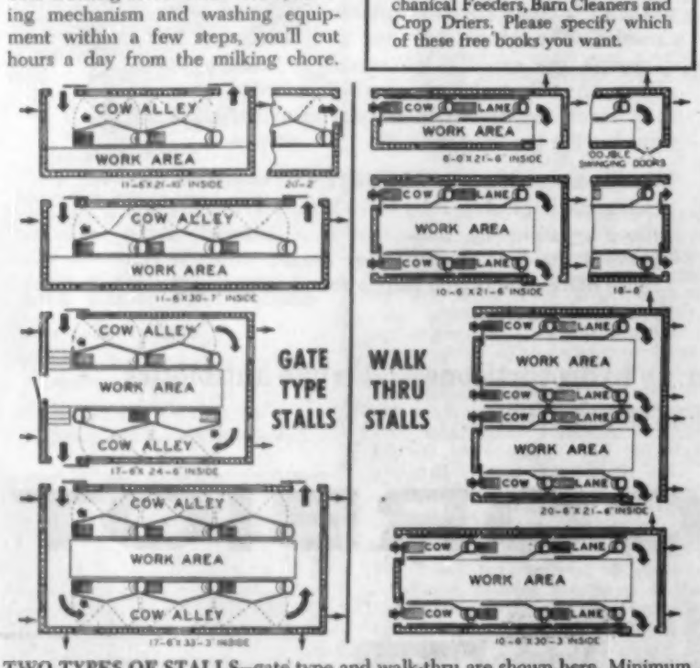
Two types of stalls

Either gate-type or walk-thru stalls can be used in your new parlor. Both have certain advantages. With the gate type, you'll need entrance and exit alleys. In a walk-thru installation, the stalls act as an alley. This can mean a 30% savings in space and a big cut in total building cost.

There is little difference in milking time between gate type and walk-thru installations. Some dairymen prefer gate stalls because of occasional slow milkers. Also, they like to give individual attention to certain cows. Personal opinion, amount of space available, number of operators, and handling of cows are important factors to be studied before deciding on type of stalls.

MILKING PARLOR BULLETIN FREE

The newest, most up-to-date information on planning milking parlors is contained in a new book by Mr. Joe Clay. A copy will be sent to you free on request. Write to: Clay Equipment Corp., 962 Olive St., Cedar Falls, Iowa. Free books also available on Silo Unloaders, Mechanical Feeders, Barn Cleaners and Crop Driers. Please specify which of these free books you want.



TWO TYPES OF STALLS—gate type and walk-thru are shown here. Minimum space requirements are shown on sketches. Arrows show entrance and exit of cows. Pick out the plan that most nearly fits your need. Mark this plan with pen or pencil and mail to Clay at address in box above. We will gladly send you standard floor plan and money-saving ideas. This service costs you nothing.

Opinions, Brickbats, Bouquets . . .

(Continued from page 894)

olistic position a large section of labor has obtained in the economy, labor is gaining an inequitable proportion of the rewards of economic efforts and is depriving the producers of capital materials of their just share of these rewards.

Farm parity can equitably reward the economic efforts of the farmers only if and when a similar "parity" is forced upon the factor of production that is producing the present distortion. "Parity" cannot be a one-way street.

When you encourage the farmer to believe that "parity" will give him the bargaining power to "offset or balance the well-organized pressures of labor and business in their successful efforts to secure an ever-greater proportion of the consumer's dollar," you are telling him that agricultural "parity" will somehow restrain the power of entrenched labor to increase unceasingly its share of the national income, regardless of whether these increases bear any relation to labor's productivity.

Labor, of course, is counting on and profiting by monetary inflation. The farmer's income, to a major extent, represents the earnings of capital, and the earnings of capital are affected most severely by creeping monetary inflation.

Illinois JAMES H. KELLEGHAN

Allotments for small farms

The federal income tax laws recognize the fact that the small income cannot stand the same rate or percentage of tax as the large income.

The small family farm is in the same relative position with regard to acreage allotments as the small income is to tax. Sufficient exemption must be made so that the small farmer may be allowed to produce for himself and family a satisfactory standard of living.

Surely, if a farmer's income is below his federal income tax exemption, he should be given careful consideration before being required to further curtail production.

At present, there is no recognition of basic living requirements in applying allotments. No matter how substandard his living conditions may already be, the small farmer is required to further cut his production at the same rate as the large producer.

Kansas C. W. KNITTLE

Too much skimmed milk

I have been reading your magazine for years. The article written by Alec Bradfield and W. A. Dodge in your August 10 issue tells only a small part of the milk producer's problem.

It tells that half of the people over 25 in the United States do not drink milk regularly. What a market! It also goes on to say that farmers should try in every way to make their milk taste better in order to get to that part of the people.

Do Mr. Bradfield and Mr. Dodge know that a man in the city cannot buy a bottle or a carton of whole milk? Milk bought by the people in the city has been skimmed down to a point where, according to law, it cannot be lower. How low is that point over the nation, 3.4 or 3.5?

Let those people get a good creamy taste of real milk, not skimmed milk. If those people could drink milk, that good whole milk that is produced on the farm, I am sure that would help solve the milk and butter surplus.

If this could be put to our lawmakers who say the farmer needs help, and give him this kind of help, it wouldn't be long before dairy farmers would be looking for cows and not having closeout sales.

Kansas HAROLD KRAMER

Demanded her price

The letter, "Set our own prices," reminds me of how one woman near here got even with a feed store. This lady ordered about 600 pounds of chicken mash. When the company delivered it, she had them empty it into two barrels that had some feed in them, and some in a large box that also had some feed in it.

This company also bought eggs. The lady had eggs in pans and boxes, and some in a basket; about 60 dozen in all. After the driver had cased all the eggs, she asked the price of the feed and the price he was paying for eggs. She then raised his price 5 cents per dozen to which he objected.

The lady then told him he would have to pay her the price she set, or he could count all her eggs back and weigh back the feed that he had emptied and take it back to the store.

The driver paid.

Indiana A READER

Let's be optimistic

Your O. B. & B. column is fast turning into a broad shoulder for dairymen's tears. At one time there were many interesting letters printed therein. Now each issue brings forth more weeping, wailing, and gnashing of teeth.

We've read many letters designed to solve everything for us from very sensible ones suggesting quality improvement of dairy products, extensive advertising such as through A.D.A., and very careful farm and home management (which we can certainly use), through to some extremely radical socialistic ones like selling our farms to the government and working for it.

Some want government gifts. Let's face it! The government is the people, not a fairy godmother as some would believe. To give to us they must take from us. Others think of themselves as employees instead of businessmen, and want to join the unions. It would really be novel if, let us say, all the footwear manufacturers would join the AFL-CIO and CIO and demand that the government subsidize them because they overproduced.

We all are having rough sledding, but must our countenance be so tearful? It would be cheerful to once more read letters pertaining to pleasant farm experiences and activities along with the serious vein. Here's for a bright outlook!

Pennsylvania NANCY D. SINGER

Contains 10% Fats

Gives 22% Extra Calories

It's a Milk Product

No Cereals Added

Sell every drop of your milk!*

Switch calves to Land O' Lakes Calf Milk Replacer at four days

INCREASE MILK SALES DURING YOUR BASE PERIOD

If you sell fluid milk, now you can increase your base and raise your milk profits all year 'round. Or, if you sell only manufacturing milk, now you can market every drop.

How? Simply by switching your calves at four days to Land O'Lakes Calf Milk Replacer and selling *all* your valuable milk! You can feed it for about $1.75 per hundredweight—far under the price of whole milk.

And remember this about Calf Milk Replacer. It's a milk product. It is not a milk substitute. Absolutely no cereals added. It does not create a milk surplus. And it's fortified with vitamins and trace minerals plus antibiotics.

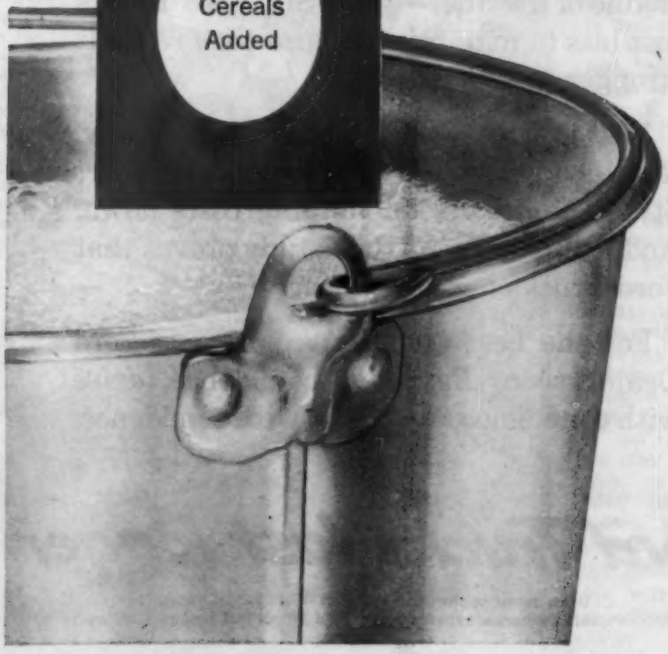
What's more, 10% added fats give your calves 22% extra calories (over and above maintenance) for building extra weight, better hair coat and thriftier condition. Why wait? Buy it from your local dealer.

*After colostrum (4 days) all your milk is marketable.

Land O'Lakes

CALF MILK REPLACER

Also sold as CALF MAKER and CALF NIP in some areas



CALF MILK REPLACER

ARIZONA: Southwest Cooperative Wholesale

CALIFORNIA: Poultry Producers of Central Calif.; San Joaquin Valley Poultry Producers Association

COLORADO: Denver Milk Producers, Inc.

IDAHO: Idaho Egg Producers

ILLINOIS: Illinois Milk Producers

INDIANA: Indiana Farm Bureau Cooperative Association, Inc.

IOWA: Land O'Lakes Dealers

KANSAS: Farmers Cooperative Jobbing Association

MICHIGAN: Michigan Farm Bureau Services, Inc.

MINNESOTA: Land O'Lakes Dealers

NEBRASKA: Land O' Lakes Dealers

NORTH DAKOTA: Land O'Lakes Dealers

OREGON: Pacific Supply Cooperative

SOUTH DAKOTA: Land O'Lakes Dealers

TENNESSEE: Mid-South Milk Producers Association

TEXAS: Gulf Coast Federated Feed Association; North Texas Producers Association; Wichita Falls Area Milk Producers Association

UTAH: Utah Poultry and Farmers Cooperative Association

WASHINGTON: Washington Cooperative Farmers Association

WISCONSIN: Land O'Lakes Dealers; Wisconsin Farmco Service

WYOMING: Big Horn Cooperative Marketing Association

SOLD AS CALF MAKER IN

SOUTHERN STATES COOPERATIVE, INC.: Delaware, Kentucky, Maryland, Virginia, West Virginia, Tennessee.

FARMERS COOPERATIVE EXCHANGE, INC.: North Carolina, South Carolina.

THE COTTON PRODUCERS ASSOCIATION: Alabama, Georgia, Florida.

SOLD AS CALF NIP BY

MFA Co-op Exchange, Missouri

sold as FELCO CALF DEVELOPER by

Felco Elevators of Iowa

LAND O'LAKES CREAMERIES, INC., MINNEAPOLIS 13, MINN.

New increased capacity for Ford's "2-ton" farm workhorse. Series F-600 is now rated for a whopping 19,500 lbs. GVW with optional heavy-duty components. Widest choice of modern Short Stroke power, V-8 or Six!

For big jobs, small jobs, all jobs...

Ford Trucks cost less!

More loadspace for your money! Ford's F-100 Pickups now offered in two lengths. New 8-foot box gives up to 19 cu. ft. more capacity than any other half-tonner. Regular 6½-foot box is one of roomiest in its class.

Fine for family use, too. The Ford Pickup rides so easy and handles so easy, even the "Missus" will enjoy running it to town! And only Ford offers you the added safety and peace of mind of Lifeguard Design.

Low initial cost is only one of a number of reasons why farmers everywhere find that Ford Trucks cost less.

Only Ford provides the oil and gas economy of modern Short Stroke power in every engine of the line—V-8 or Six! Ford Trucks cost less to maintain because they're built stronger to last longer.

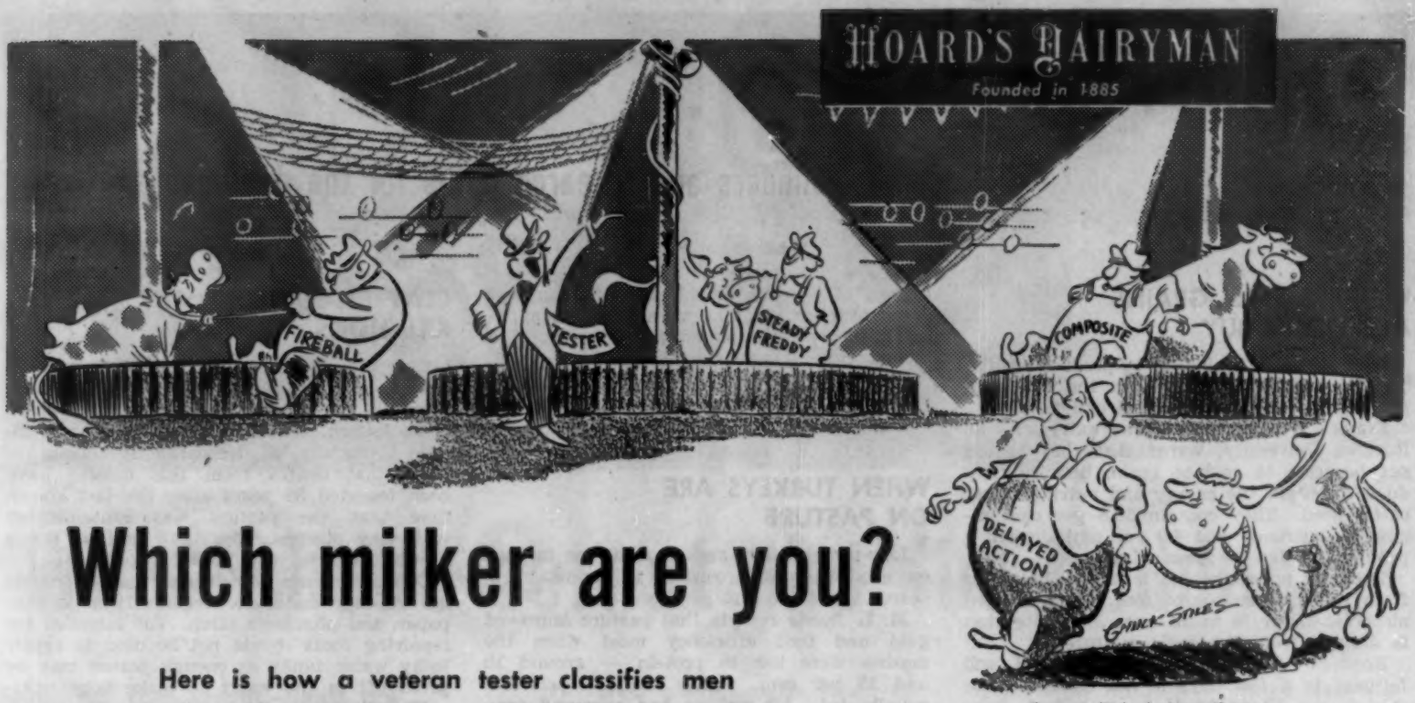
Yes, first cost on a Ford Truck is low. Resale value is high. Ford's modern Short Stroke engines keep running costs down. And a 10½-million truck study proves that Ford Trucks last longer.

For the best truck buy, see your Ford Dealer soon. *Buy* with confidence, *drive* with confidence and SAVE with confidence.

Ford Trucks last longer

Using latest registration data on 10,502,351 trucks, life insurance experts prove Ford Trucks last longer.

HOARD'S DAIRYMAN
Founded in 1885



Which milker are you?

Here is how a veteran tester classifies men who milk cows. Are you "Fireball," "Delayed Action," "Composite," or "Steady Freddie"?

by John A. White

WHAT kind of milker are you? Are you a 10-second, jack-of-all-trades, milk-'em-all-at-once man? Do you shoot up and down, back and forth, around and around with sparks flying from your shirt tail?

You do!

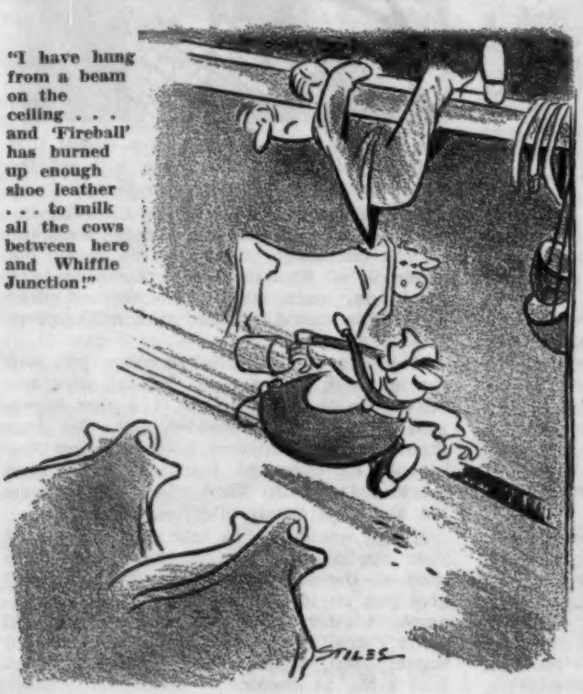
Then you are a subscriber to the "Hot Rock" or "Fireball" system. It is demanding and is not for old gentlemen. Its users are often temperamental and irritable.

To do it right, one man must use at least four milker units. A topnotcher uses no help in washing or in stripping the cows. To begin, he puts machines on cows No. 1 and No. 10 on the east side of the barn and dashes over to put machines on cows No. 2 and No. 8 on the west side of the barn.

This done, he goes to the milk house to set up cans and strainers. He may also feed grain, clean out 2½ calf pens, and go out to shut off the tractor since he didn't have time to do that when he came in from the field.

When he gets back, he takes the machine off of No. 10 on the east and puts it on No. 4 on the west. He is on the west side so he takes the machine off of No. 8 and puts it on No. 15 on the east. He takes one off of No. 1 and, let's see, where does he go?

The tester can't tell for sure. He can hear him but he can't see him.



"I have hung from a beam on the ceiling . . . and 'Fireball' has burned up enough shoe leather . . . to milk all the cows between here and Whiffle Junction!"

The irritable one . . .

If you ask "Fireball" why he uses this system, you will understand what I mean when I say he is sometimes irritable. He implies that any fool can plainly see it is because his cows do not always stand in the same place and, because of freshening times, it is imperative that he milk cows 1, 10, 2, and 8 first, and so on.

Or it may be just as clear that it is because his cows do stand in the same places all the time but cows 1, 10, 2, and 8 freshened first (or last) and so must be milked accordingly.

Observing this procedure is always interesting. If the man's wife helps milk, the game is livened up a bit. If the tester happens to be there, it is better than a three-ring circus. In some cases, however, the tester is not allowed to participate. He may be asked, rather pointedly, to leave the barn and hang his scales in the milk room "so the cows won't get upset."

If this human meteor upsets his wife in his passing from squealing teat cup to squealing teat cup, it is a family affair. She should be more alert.

I have hung from a beam on the ceiling by one hand and, with my watch in the other hand, found that 27 minutes can elapse from the time a milking machine is put on cow No. 1 until it is taken off again. Yet, in 27 minutes, "Fireball" has burned up enough shoe leather and nervous energy to milk all the cows between here and Whiffle Junction.

He treats his cows for mastitis himself and buys antibiotics by the carton. It's a good thing he can and does.

Enjoyable visiting . . .

Then there is the "Delayed Action" milker. He is a congenial fellow and I always enjoy visiting with him. If we didn't have to bother with the cows, we could enjoy ourselves more, though.

On evenings when the tester comes "D. A." milks after supper and that may be rather late sometimes. I have known it to be as late as 8 o'clock.

After supper we sit around the table and chat while we smoke our pipes and settle our meal. Later on, it occurs to us that the cows haven't been milked so we amble out to the barn. We have been in no hurry up to this point and there is no need to hurry now.

After the cows have been fed, milkers assembled and put on, we pull up a couple of milk stools and continue our visit. When we reach a suitable breaking point in our conversation, we change milkers, and weigh and sample the milk. Then we return to our stools.

"D. A." may use four units, too. He figures that by milking four cows at a time he will have longer to visit or do chores between changes. He changes all four machines before sitting down again, of course.

Sometimes small children gather around to listen but they tire after awhile and one may say, "Milking sure is late tonight," and go off to bed. Cows that took an interest in the tester, at first, *(Turn to page 918)*

" . . . it is better than a three ring circus!"

Farm Flashes . . . .

Seasonal reminders and research notes for the dairyman

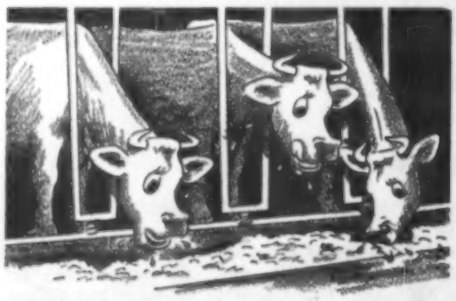
WET BREWERS' GRAINS ARE GOOD BUY

Wet brewers' grains, a by-product of the brewing industry, fit well in the roughage program to supplement silage and pasture.

Frank Wright, extension dairyman at Rutgers University, warns that they should not be used to replace grain, because they do not contain the energy and nutrients that cattle need. They contain 16.8 per cent digestible nutrients and 4.2 per cent digestible protein, similar to grass silage.

There is no danger of a bovine hangover from this new source of feed, which is non-alcoholic. Beer is made from the juice that is drained from the grain mixture.

Brewers' grains are perishable and will ferment in a few days in hot summer. For this reason they should be restocked every



three or four days in summer. In winter, they will last two weeks if protected from the weather and kept in a tight enclosure.

Since they vary in weight, wet brewers' grains are usually sold by the bushel. In the New Jersey area, they sell for 42 cents a bushel, delivered.

For best results, feed 25 to 30 pounds per cow per day. Molasses and water over the wet grains make them tastier.

Home-grown pasture, hay, and silage still are your most economical source of nutrients, but if these are running out, wet brewers' grains can make an economical substitute.

KILL CHICKWEED IN OCTOBER

The weed-killing chemical, dinitro, can be used successfully to kill chickweed and other annual winter weed pests in alfalfas and clovers in October and early November.

The general rule has been to hold off spraying these weeds until the legumes are completely dormant in late December, January, or February. However, United States Department of Agriculture tests show that applying dinitro in October did not harm the alfalfa even though it was not dormant. At that time, chickweed, spurry, and henbit were small and had not matted down, so that the chemical could be used at a lower rate of application.

The weed-killer was applied to a late summer seeding of alfalfa and brome grass when alfalfa and chickweed were only 2 or 3 inches high. Dinitro was sprayed at the rate of ¾ to 1 pound of the active material on October 20. The plots yielded 400 pounds of dry material per acre more than was obtained when dinitro was used at the same rate in February.

The best control of chickweed, with least damage to alfalfa, was obtained with 2 applications of ¾ of a pound each. Second best is an October spraying with a repeat application in late winter or early spring, if a second crop of weeds threatens.

Be sure to keep animals out of sprayed areas. If you do much spraying, wear rubber gloves and a respirator.

WHEN TURKEYS ARE ON PASTURE

Low-protein diets are all right for turkeys on good pasture, according to extensive research at Wisconsin.

M. L. Sunde reports that pasture improved gain and feed efficiency most when the mashes were low in protein — around 10 and 15 per cent, rather than 20 per cent usually fed. All turkeys had corn and oats.

Feed costs per pound of turkey were greatly lowered by diets which forced the birds to graze more. They were about 15 cents per pound of turkey with the ordinary growing diet and 10 to 12 cents per pound with the low-protein diet on good pasture.

Sunde warned that the pasture must be good. Turkeys on poor pasture with low-protein feed showed deficiencies of an essential feed ingredient, lysine.

The low-protein diet was started when the birds were 6 weeks old. Broadbreasted Bronze males averaged 22 to 23 pounds at 26 weeks on good pasture. The females averaged 14 to 15 pounds.

Turkeys fed 15 per cent protein mash weighed the same as those on a 20 per cent protein — an average of about 1½ pounds per bird more than the low-protein. Feed costs for the 15 per cent group were about 2 cents lower per pound than for the 20 per cent group.

PREVENT WORMS IN LAMBS

Lambs on pasture should have either a mineral called dicalcium phosphate or a drug called phenothiazine with trace minerals.

Research just completed at the University of Wisconsin indicates these are low-cost ways of protecting lambs against possible stomach worm attacks. Phenothiazine drenches give additional protection.

A good mixture is 15 pounds of trace-mineralized salt with 5 pounds of dicalcium phosphate, or 19 pounds of trace-mineralized salt with 2 pounds of phenothiazine. At current prices, the dicalcium phosphate mixture would be cheaper.

Seventy-two lambs in the test were purposely infected with a heavy dose of stomach worm larvae. While no lambs died because of stomach worms, there were some deaths from other causes.

The lambs which got only trace-mineralized salt gained slowly, graded very low, and brought only $11.80 per hundred at market time. Most of the other lots averaged between $17.50 and $19 per hundred pounds.

Best returns, highest grades, best gains, and lowest worm counts were in groups receiving phenothiazine drenches as well as the dicalcium phosphate or phenothiazine in the trace-mineralized salt.

The researchers emphasize that periodic drenching and pasture rotation are essential practices in addition to either salt mixture.

CLAY PIGEONS KILL HOGS

Clay pigeons can be the cause of death in swine. It often results when pigs are pastured in lots used for trap shooting. There is no known treatment once pigs become ill.

A University of Nebraska specialist reports that deaths from this disease have been reported 35 years after the last known time that the pasture was contaminated with clay pigeons. Less than half an ounce of this material will poison a pig.

Other products which may cause trouble are roofing materials, certain types of tar paper, and plumber's pitch. Tar intended for repairing roofs should not be used to repair leaky water tanks as enough poison may be given off in the water to make hogs sick.

The disease strikes suddenly and the affected animal will be ill only a few hours before death. Prevention is the only cure.

WIRING MAY CAUSE TELEVISION TROUBLE

When electrical equipment is not performing satisfactorily, it is probably due to the fact that it is not getting enough current.

University of Massachusetts engineers say a fully-loaded circuit, composed of No. 14 wire, should not be required to deliver more than 1,725 watts, the equivalent of seventeen 100-watt bulbs.

A television set takes about 500 watts; your air conditioner takes 750 as does your coffee percolator. Together they use 2,000 watts, as much as twenty 100-watt bulbs.

If you hook 20 such bulbs to a circuit that delivers only 1,725 watts, you will get the same amount of light as from 17 bulbs.

Adequate wiring depends on a service entrance capable of carrying the full load and enough circuits in the house to carry full power to all appliances. There should be a circuit for each 500 square feet of floor area. This should be fused with a 20-ampere fuse or circuit breaker.

If you are using No. 14 wire, you will get up to 1,725 watts. A No. 12 wire will deliver up to 2,300 watts. If a fuse blows, your circuit is overloaded but the fuse should not be replaced with a larger one because an oversized fuse will lead to an overloaded circuit. Then wires may become hot and fires can result.

If you would like to take an inventory of your appliances, then determine which are used at the same time. The following will give you an idea of what it takes. For example, toaster, 1,100 watts; percolator, 750 watts; small radio, 30 watts; lights, 120 watts; total, 2,000 watts, enough to overload a No. 14 circuit.

SHREDDING cornstalks that have been allowed to dry after the corn was picked. Rotary-type forage harvesters and cornstalk shredders can be used.

What about cornstalks for bedding?

Shredded corn stover yields are comparable to oat straw. Both will absorb 250 pounds of water per 100 pounds bedding.

by O. I. Berge and G. P. Barrington

OF THE multitude of problems facing the dairy farmer, that of obtaining an adequate supply of bedding is frequently considered to be a minor one. However, to the farmer faced with the necessity of buying bedding at prices up to $20 or $30 per ton, this minor problem rapidly takes on major proportions.

We know that when we combine grain, our supply of bedding is reduced. True, some straw can be salvaged after combining, but most of the chaff is lost, so we have a less absorbent material. Some dairy farmers now use a windrower and a forage harvester to harvest their grain and the grain is threshed in a stationary threshing machine. One of the reasons for this is that more and better bedding is obtained.

Farmers are now growing less grain in favor of a more profitable hay or corn crop. If six-year rotations are adopted, and they are practical now with some of the newer alfalfa varieties, this would reduce our grain acreage by about a third. Also, some farmers are harvesting oats for silage, thus eliminating the possibility of salvaging the straw. In some areas consideration is being given to the use of corn as a nurse crop and completely eliminating the grain crop. Thus it would seem that on many farms we will have to expect still smaller straw harvests.

The number of cows on our farms is increasing, which will increase our total demand for bedding. The following table gives bedding requirements for what would be presently considered good care. Everything considered, it seems we should be looking for a source of bedding other than straw.

Bedding requirements	Stanchion barn	Loose housing
Pounds per cow per day	8	12
Tons per cow per season (240 days)	1	1½

The authors are members of the agricultural engineering staff, University of Wisconsin.

In those areas where corn is raised for grain, it was once a common practice to augment the bedding supply with shredded corn stover. With the advent of the corn picker, this practice has been largely abandoned. Recently a few farmers have devised methods of salvaging cornstalks for bedding following mechanical picking. The following chart indicates that such bedding would compare favorably with straw for absorbing moisture.

Water absorption capacity . . .

Material	Pounds of water absorbed by 100 pounds of bedding
Wheat straw	210
Oat straw	250
Shavings	119-220
Sawdust	80-160
Shredded stover	250

The yield of shredded stover can be expected to run from 1 to 1½ tons per acre if the ear corn yield is 70 bushels. This compares favorably with oat straw where we can expect to salvage about 1 ton of bedding per acre if the grain runs 60 bushels. Lower yields of grain in either case would probably result in less bedding.

One problem which may be encountered is that of moisture in the stalk. It is somewhat hazardous to store any high-moisture material because of the possible occurrence of spontaneous ignition. Even though fire does not occur, molding probably will take place if the moisture content is much above 25 per cent. Mold in this case is not as objectionable as it would be in the case of feed, but it is still undesirable. It would certainly be most desirable that the cornstalk be quite dry when harvested.

It is rather difficult to predict what the moisture in the stalk will be at the time of picking. This seems to depend on a number of factors such as the variety or type of hybrid, the weather during the latter part of the summer, fertility level of the soil, and to some extent, the amount of damage due to insects and disease.

After picking, moisture content of the stalk will decrease, but the amount depends largely on the damage to the stalk inflicted by the picker. A picker which crushes all the stalk or removes the stalk from the root system will promote drying of the stalk. In some cases, where several factors are favorable to low moisture in the stalks, it is possible to harvest stalks directly after picking. Some farmers report successful harvest and storage of stalks this way. Frequently the stalks are much too wet to harvest when the corn is picked.

Let stalks dry . . .

In one case where stalks were harvested three weeks after picking, bales which were made from the harvested stalks ran from 44 to 50 per cent moisture, and heated and molded considerably. This was during a dry fall with no rain in the interval following picking. The leaves and upper part of the stalk were dry and brittle, but the lower part of the stalk was very high in moisture. Individual sections of the stalk ran from 70 to 80 per cent water.

Before harvest of the stalks, a careful inspection of the crop should be made. If all the stalks seem to be dry and brittle throughout their length, the stover can probably be safely harvested and stored. If appreciable amounts of green stalk *(Turn to page 922)*

CORN STOVER BALES are easily handled as they usually weigh less than 35 pounds, are firm, and stack well. Stover should be baled when moisture content is below 25 per cent.

THE RANKIN FAMILY, left to right: Amzi, Sr., chairman of the board; Amzi, Jr., oldest son, 35; Joe, 30; Mrs. Rankin, "Miss Susie"; William, 20; and John, 32. Each has his own responsibility; Amzi and Joe, the milkers; John, roughages and calves; and William, the farm machinery.

"Kitchen-konferences" pay off

Cedarcrest Farms of Alabama support four families and the Jersey herd is becoming one of the best known in the South.

by Jack C. Nisbet

TWO hundred forty-two years of experience and know-how go into the management of Cedarcrest Farms. Important discussions and decisions are made at "kitchen-konferences" in Dad's and Mom's home. Sometimes these sessions are held at 6 in the morning, or at a 10:30 a.m. or 3:30 p.m. break; in rainy spells they become pretty much all-day affairs. Always there is coffee (a pot full) and a huge pitcher of cold, taste-tempting milk.

Come take a little "story-visit" with us. Let's look in on the Rankin Family, their farm, and the Jersey herd they have built deep down in southwest Alabama near the small town of Faunsdale. .

Cedarcrest today comprises 1,253 acres of better than average farmland. Hot summers and droughts pretty much eliminate high individual cow records, but long pasture seasons and economy of production along with good management offer income opportunities. The herd is made up of some 400 registered Jerseys, and the character and quality of its cattle make Cedarcrest the fountain head of foundation animals for a sizable area throughout the Southland.

A. G. Rankin and Sons . . .

First, let's meet the Rankins. Dad's name is Amzi, born in 1890 at Marion, Alabama, and 65 years young. Then there's Mother, known endearingly far and wide as "Miss Susie." The oldest son, Amzi, Jr., is 35. He was an army captain in World War II, and went to Auburn Polytechnic Institute. He and wife Martha have three children—Pete, Garland, and Nancy. Joe is 30. He was a machinist's mate in the navy, and also went to Auburn. With his wife, Wessie, they are raising a lovely family of five—Joe, Rachel, Juliana, George, and Terry Sue. John is 32. He and wife, Doris, have three children—Kaye, Pat, and Am. John, too, went to college at Auburn. The fourth son, William, 20, is single and a junior at Auburn. The Rankins have one daughter, Rebecca, a graduate of Judson College and married to Robert Sherling, a chemical engineer.

The Rankins are leaders in local and state affairs pertaining to farm, herd, and church. John has been state president of the Alabama State Jersey Club for several years. Amzi, Jr., held the same office previously.

Started from the ground up . .

Amzi G. Rankin was not always a farmer. As a boy, he did milk a Jersey cow, for which he was paid in script. However, it was his mother's wish that he be a preacher. To get the money for necessary schooling, he took a job as a billing clerk in a freight office at $20 a month. A beautiful farm scene made Amzi decide against the ministry and determine to become a farmer. This decision took him to Auburn to study agriculture.

For three years after graduation he worked on the cotton farm of Bill Eisland, county farm agent. Saving up $500, Amzi bought two mules, rented some land, mortgaged the mules, and bought some cottonseed. He was in business for himself. He later bought 15 grade cows, a purebred and a bull. The purebred cow, Raleigh's Fairy Sally, made the fifth highest record of the breed for her age. Milk was sold as sour cream to the first creamery in Alabama.

Panics, hard times, and tight credit resulted in a pretty small income to Amzi. He wanted a herd like his neighbor, Frank Bates. He farmed his registered cows out and struck out as a Register of Merit tester. From these testing visits, he began to build a store of knowledge, benefiting from both mistakes and success of others.

After three years of cow testing, Rankin became associated with King Pharr, a well known breeder of Jerseys in Alabama. From 1925 to 1930, Amzi was the farm manager for Robert Jemison, Jr., Spring Lake Farm, Birmingham. Up to this time Amzi Rankin had milked every class leader in Alabama except one, and that one he started on test.

Again a decision to strike out with his own farm and herd was made, and a farm was purchased at Gallion. With limited means and little credit, the farm had to be a pretty sorry one. It was stocked by 16 mules, 35 Shetland ponies, and some cows. Doing a good job with what he had led to Amzi's getting the credit he needed to buy the first few acres of the present Rankin holdings at Faunsdale. Surely it was just a wornout cotton farm, but in it Amzi, Sr., saw the opportunity for a home, a business,

INDIVIDUAL PENS used for calves. Here a happy, healthy Jersey enjoys outdoor comfort.

and a happy livelihood for his family.

Cow numbers were built up, and then came Bang's. A total of 57 went out on the first test; 34 on the next; 17 on the third test. Rankin was so discouraged, he turned the cow barn over to his oldest son at $1 a week wage, and never entered the barn again until Amzi, Jr., started college.

Meet "Miss Susie" . . .

Amzi married "Miss Susie" in 1919. What a team they became! She was a graduate of Alabama College for Women, going out as a school teacher, and later becoming one of the most beloved and talented home demonstration agents in the state. Blessed with a keen intellect, feminine charm, and indomitable optimism, "Miss Susie" radiates the hospitality for which her beloved Southland is world renowned.

Her home is her castle, and the visitor soon realizes that this is not a warehouse for material things, but, rather, it is a happy spot devoted to the comfort and contentment of family and guest. The magnetic personality of "Miss Susie" is exemplified in the constant coming to her side of sons, daughters-in-law, and grandchildren. Besides family and friends, Miss Susie has only one additional hobby—that is fishing. Her family built her a private fishing pond right on the farm.

With all their other rights to fame, fortune, and acclaim, we like to think of Dad and Mom Rankin as having a partnership with the soil that successfully educated their family of five children and, in addition, they have established a dairy farm business that offers the four sons a home and a comfortable living for their respective families.

At "marrying time," Mom, Dad, and Son have held a "board meeting." The son and his intended are fully informed of what they can expect from their partnership in agriculture. The assets of living from the farm, no rent, work security, and fun in the job are all brought out in the discussion. As each couple has agreed, a new home has been built and, as "Miss Susie" says, far enough from the others so they can have dogs and children, and each live, love, and enjoy their separate homelife country-style.

"Kitchen-konference" in 1945 . . .

We can only spotlight a few meetings-of-the-minds "konferences" at Cedarcrest. One happened in 1945, just prior to the Orange Blossom Dispersal on the West Coast. A friend and top Jersey promoter in Alabama, Bob Bell, had suggested the family step out and bring in some new Jersey bloodlines. This advice checked with that of E. P. Gulledge, another good friend and now a successful breeder in South Carolina. Dad Rankin, from his cow testing experience, knew what Jersey families were best for milk. But the matter of type had been given no serious thought. It was Bob's argument that type and production could both be bred in Jerseys and that Cedarcrest could step forward as the source of foundation stock for a wide area in the South with the right kind of cattle for sale.

Amzi Rankin, Sr., did attend the Orange Blossom Sale. He got a new and inspired insight as to what could be done at Cedarcrest. Here he got the dream that the right kind of breeding herd offered not only a milk income, but, also, an additional sum from the sale of desirable cattle. But Dad couldn't afford too many at the high prices that prevailed at the Orange Blossom event.

A trip to Canada in 1946 did result in a few nice heifers being purchased. Visitors' eyes began to pop. Real sales inquiries began to come Cedarcrest way. Later in 1946, Mr. Rankin and son John made another trip to Canada which resulted in the purchase of some 10 heifers from Roslyn Park Farm. At the Sale of Stars in Columbus, Amzi, Jr. selected the inbred Dandy Sparkling Hope, that later proved to be the nucleus of a group of cattle that produced profitably and, in addition, they ran off with many top type honors in national shows. "Hope" himself was classified Excellent, as were seven of his daughters and one son. He now has 125 daughters in the Cedarcrest herd.

The Get of Dandy Sparkling Hope was second at the 1953 National and first at the National Dairy Cattle Congress in 1955. A Canadian purchase, Imp. Brampton Belmont Regal, Excellent, was grand champion and best udder winner at the 1952 National Jersey Show. Another Canadian purchase, Roslyn Samares Princess, Excellent, was second best udder at both the National and the International Dairy Shows. Golden Philidora, Excellent, was winner of the coveted three-year-old class at the 1953 Jersey Jug Show.

The best of a situation . . .

"Konferences" at Cedarcrest became constantly concerned with how to make the farm enterprise more profitable. At one session an insurance plan was worked out whereby the family of a deceased member of the partnership would be paid up for their interest in the farm. Thus the farm would carry on without worry of estate settlements.

By dividing the several responsibilities (Amzi, Jr., and Joe each to a barn of milkers, John to improving hay, pastures, and calf raising, William to the job of keeping farm machinery ship-shape), the several phases of feeds, breeding, and management were given special study and research.

Typical of how well each developed into his assignment was Amzi, Jr.'s decision to go to work in the barns at Falklands Farm, Pennsylvania. Here, under Marshall Dearden, he learned things not in books, just as his daddy, Amzi, Sr., did back in the days when he was employed as a cow tester.

John, too, was busy on the national show circuit plans. He was picking up the facts-of-the-trade that would add to and insure success. William was studying the wear and tear on machinery not properly housed, and finding out the costs of building permanent shelter. Joe was tracing down all the ways and means of improving farm roughages from silos for grass to drainage, rotation and fertilization of pastures.

The "kitchen-konferences" at Cedarcrest became a meeting of specialists, each fortified with costs, advantages, and disadvantages, of improvements in his domain. Each, including Dad, Mom, and the four sons, knew that all suggestions and improved practices would be considered, weighed, rejected, or accepted as they might offer the best answer under existing situations as to financing and paying out.

Follow practices with most promise . . .

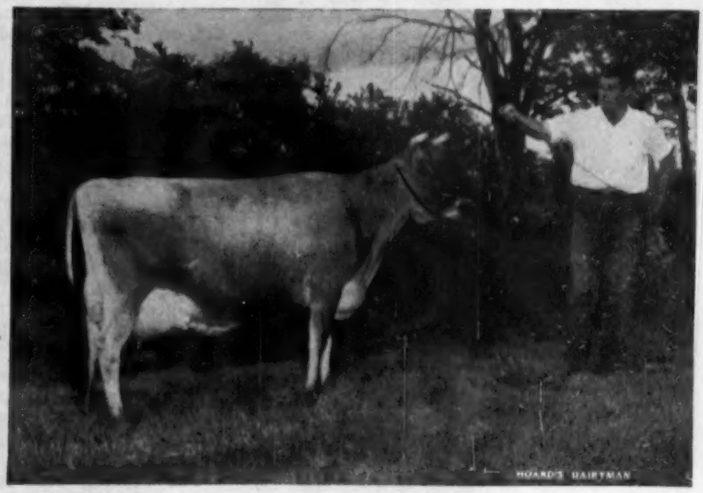
Typical of the outcome of these meetings of intelligent, informed, interested partners was the decision at one all-important "kitchen-konference." Limited by the costs of many immediate improvements in soil, crop, and pasture improvement, and faced with environmental and geographic handicaps, the hopes of competing for production awards with more favorable farming sections didn't look too good. It was here again that the Rankin trait of "doing the very best you can with what you have" came to the fore. Cedarcrest's environmental conditions could in no way affect the type rating of the home herd. Therefore, something could be done about building the classification average to compete with other Jersey herds everywhere—no matter what their geographic advantages.

It was this building of a real character herd that first brought national attention to Cedarcrest. Now, with pasture and other improvements coming each year as these may be purchased or financed, production inheritance is being brought clearly to the fore. As might be expected, Dad Rankin, from his seat as "Chairman of the Board," never let the all-importance of production fade, diminish, or be minimized in the selection of foundation animals.

This is but a progress report of the A. G. Rankin and Sons' Cedarcrest Farms' partnership operation. The story to date records the purchase of a rundown farm, raising a fine family, with the distinctive tribute of an education for five provided by that farm and its splendid herd; it should be an inspiration to father-son partnerships everywhere. As expressed by Amzi, Jr., "We get pleasure, satisfaction, and renumeration out of much more than monetary returns alone; in fact, very few colored folks and no white people have more fun than we do."

THE END

MILKING BARN, one of two, which handles 100 cows. There are no box stalls; regardless of weather, cows are outside winter and summer.



JESTER STAR NELLY, one of the cows classified Excellent, held by Amzi, Jr. She is fifth generation bred on female side at Cedarcrest.

LOOSE BEARINGS in front wheels allow dirt to enter. Bearings will wear out in a short time unless they are kept tight with grease.

CLEAN BEARINGS by washing off all old grease with paint brush and kerosene. Keep clean until they are greased and installed.

REPLACE SEAL on wheel bearing to keep out dirt. This seal has an important job to do; always replace the old seal with a new one.

ADJUST WHEEL by tightening nut until the wheel drags; then loosen the nut one-sixth of a turn and install cotter key in the wheel.

Keep front wheels rolling . . . with clean grease

Front wheel bearings get a real workout, but they will last the lifetime of your tractor, if kept tight and well greased.

by J. A. Weber

FOUR row cultivators and heavy manure loaders give front wheel bearings a real workout. Front wheels have to run in lots of dust and dirt, too. But they are designed to take it and do the job with a minimum amount of service.

Front wheel bearing failures will be scarce on your farm if you will give them the care that's recommended.

Grease once per year . . .

If your tractor operates about 600 hours a year, one good cleaning and repacking of front wheel bearings per year should be enough. Manufacturers differ some in their recommendations, but every operator's manual has a good writeup on when and how to do it.

Before removing wheel bearings, it's a good idea to check the wheel for play. Drive one front wheel of the tractor onto a block so the other wheel is free to turn.

For four-wheelers, jack up one front wheel at a time, being sure that brakes on rear wheels are locked. Check the play by grabbing the front wheel at top and bottom. If a lot of play has developed in a year's time, it could be a sign that dirt is getting in through a worn bearing seal.

Take an extra close look at bearings in a wheel with lots of play for there may be chipping of some of the bearing rollers.

Clean the bearings . . .

Front wheels are held on by a lock nut and cotter key which must be removed before the outer bearing and wheel can be taken from the tractor.

The inner bearing is a tight fit on the front axle, but it can generally be removed if the inner race is tapped lightly all the way around its circumference. Do not force the inner bearing. If it is a very tight fit on the shaft, it is better to wash it in place than run the risk of damaging the bearing.

Wash the bearings thoroughly using kerosene and a brush, making sure that all old grease is removed. Also, wash the inside of the hub, axle, nut, and bearing cap. Cost for new grease is only a few cents, so don't try to save any of the old grease that may be in the hub or bearing cap.

After cleaning, carefully examine bearing rollers and races. Replace chipped or badly-worn bearings with new ones. Put washed bearings in a clean rag where they will stay clean until you need them.

The bearing seal is the most important part of a tractor front wheel for it must keep out dirt and dust. No, its job is not to keep grease in, but to keep dirt from entering hub and getting into the bearings.

When you repack front wheels, examine the seals carefully. If they are nicked or worn or out of shape in any way, put in new ones. Some manufacturers recommend that you put in new seals regardless of their condition each time you repack front wheels.

Pack the bearings . . .

Use a wheel bearing type of grease to pack the bearings. It has a fibrous texture that keeps it on the bearing rollers where it belongs. Pack the bearings by putting a small amount of grease in the palm of your hand. Then press the grease in between the rollers until the bearings are filled. After rubbing a liberal amount around the outside of the bearings, they are ready to install.

The axle, inside the hub of the wheel and inside the hubcap, should be coated very lightly with grease to prevent rusting. Do not pack the hub and hubcap. This will waste grease and may cause a pressure to develop in the front wheel that will damage the bearing seal.

Adjust the bearings . . .

Reassemble the wheel with care. Make sure the packed inner bearing is tight against the axle shoulder. Be particularly careful not to damage the seal when you put the wheel on the axle. Install the packed outer bearing, washer, and nut. Most manufacturers recommend that you tighten the nut until the wheel starts to tighten up and begins to drag. Then loosen the nut one castellation or about one-sixth of a turn before installing the cotter key. Always use a new cotter key and make it a good fit by cutting the ends so that one will bend over the nut and the other over the end of the axle. Use a new gasket on the hubcap if one is needed.

Keep bearings clean . . .

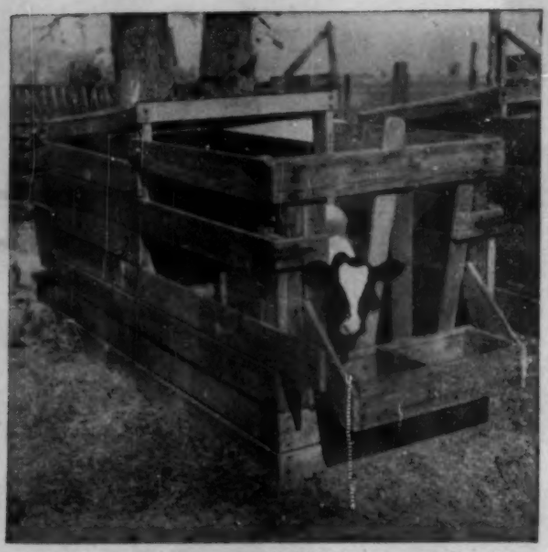
One last most important word of caution. You must keep grease, bearings, and other parts clean while you are repacking front wheels. If a packed bearing happens to drop on the ground, clean it again and repack it with new grease.

Don't take a chance on installing even a few grains of dirt with a bearing. It's better to have spent your time fishing with Junior than to do a poor job.

To make those bearings last, keep them rolling on clean grease. **THE END**

The author is a member of the agricultural engineering staff at the University of Illinois.

SOLID COMFORT is enjoyed by calves in this large pen. They have a clean, dry bed; there are no drafts. These pens result in lower mortality rates in young calves.



OUTSIDE PENS are suitable in warm climates; they can be placed on pasture or grouped near barn.

Are your calves crowded?

by Thayer Cleaver

Calves need lots of space. They will be healthier, happier, and larger if given a minimum of 4 by 6 feet each up to weaning age.

INDIVIDUAL PENS are equipped with handy hay feeders, a bottle trough, and lots of dry bedding. Solid partitions aid in preventing drafts.

LARGE PENS with stanchions for each calf make it easy to give individual attention to feeding, veterinary care, and removing horns.

TOO often young dairy stock and especially little calves do not get enough or the right kind of pen space. If space is ample, it may be poorly located. The same general rules apply in providing space for young stock whether a loose housing system, a stall barn, or some combination of both is used for the dairy. The important things to remember are:

(1) Sufficient sheltered space,
(2) Proper location,
(3) Proper ventilation,
(4) Ease in keeping clean and sanitary,
(5) Protection from drafts, especially in severe weather,
(6) Convenience in moving calves in and out of pens, and
(7) Convenience in feeding and cleaning.

Pens in a stall barn can be satisfactory, but many dairymen have found that it pays to house young stock separately because separate housing promotes better health and saves on building costs.

It is important that pens be located so that a minimum of time, travel, and labor are required for feeding, cleaning, and sanitizing operations. In loose housing arrangements, pens can be located in the resting area of the barn. If so, they should be located on the open side so they can get the winter sun, but the summer sun is shielded from them the hottest part of the day.

The pens can be of panel construction so they can be easily moved and the pen floors cleaned with power equipment when the rest of the barn is cleaned. Since calves are confined to a small space and cannot seek protected areas free of drafts, it is important that the pen walls be boarded up tight to a height of about 4½ feet above the floor during cold weather.

Use movable pens . . .

In summer or mild weather, calves may be put in small, individual, movable pens on pasture and moved whenever they need fresh pasture. If a large number of calves are raised, a central shelter with adjoining pasture may be more advantageous provided the shelter can be quickly and easily cleaned and convenient for feeding supplement and hay.

In a well-managed dairy herd if replacement stock is raised, 5 to 8 per cent of the animals will be calves under 8 weeks of age and 12 per cent will be 6 weeks to 10 months old. The older calves and yearlings can be handled in their own separate feeding and resting areas. Little calves up to weaning age should be kept in individual pens for health reasons. Such pens should be not less than 4x6 feet and preferably 4x8 feet or 6x6 feet. There are various convenient ways of feeding calves individually.

Pens for larger calves that are above weaning age will vary in size with the size of the calves. A pen for 4 calves should be not less than 10x10 feet and preferably 12x12 feet. A better way to determine pen size is to allow 25 to 35 square feet of area and 20 to 25 inches of manger space per calf, depending on the size of them.

Dry, clean place . . .

Little calves also appreciate a dry, clean place to lie down just as much as adult animals. Their manure pack can be built up to provide a comfortable bed just the same as for adult animals, but they also require fresh, dry bedding.

In stall barns, where calf bedding does not accumulate in a manure pack, a secondary floor can be built of wood slats or expanded metal sheets with the edges turned down 3 or 4 inches, thus making a removable panel about 16 inches wide. Urine will pass through this slatted floor and thus aid in keeping the floor and bedding drier and more sanitary. The main concrete floor below should also slope toward a gutter so urine can drain to it. For sanitary reasons and the prevention of odors, when the pens are cleaned, the slatted floors should be removed and the concrete floors below washed with a hose and water to the gutter.

THE END

The author is a member of the U.S. Department of Agriculture, Agricultural Engineering Research Branch, Agricultural Research Service, Urbana, Illinois.

How to keep rats off the farm

Like all other animals, rats need food and shelter. Eliminate either of these and your rat problem should disappear.

by D. W. Bates

OLD LUMBER piled against a corncrib makes a nice hiding and nesting place for rats while they eat your corn profits. Damage losses ran high in this crib.

RATS are a plague on many farms. In some cases "having a few rats around" is more or less taken for granted. As rats primarily move at night, if a few are in evidence during the day, there are likely to be many times that number around.

The damage that rats do on farms amounts to several hundred million dollars annually. Estimates of the damage a single rat will do in a year range from $3 to $10. Thus, it can be seen that the cost of having "just a few rats" is a sizeable item. Because the cost of supporting these unwelcome guests is an indirect one, indifference regarding their control is rather common.

A pair of these pests may eat as much as 100 pounds of grain in a year. In addition, they are likely to contaminate many times this amount. Where poultry or livestock feed is stored in bags, rat damage to the bags alone may become a major item, in addition to the inconvenience of handling feed in bags full of holes. Much grain that could otherwise be marketed for human consumption is unacceptable because of rat contamination. Federal laws have had to be enacted as a safeguard in preventing such grain from reaching the consumer.

Rats can do untold damage in a poultry house. In addition to the food they eat, they may actually attack the birds. Large numbers of chicks have been known to be killed by a single rat.

Cause fires . . .

Because of their sharp teeth, they can gnaw through most farm building materials short of good-quality concrete or metal. Thus they readily enter hollow walls and will also nest in certain types of insulated spaces. They have been known to eat the insulation off electric wires and many fires have been attributed to this cause.

There are cases on record where rats have attacked babies in their cribs and badly bitten them. Throughout history the rat has been one of man's worst enemies.

Some of the more common rat breeding places are beneath wooden floors, in poultry houses, barns, stables, granaries, and other buildings; in piles of firewood, lumber, and refuse. Straw, hay, and manure piles that are undisturbed for long periods offer excellent shelter. Sources of shelter may even exist beneath concrete floors in buildings having improper foundations and inside double walls.

In rat-proofing the farmstead, attention should first be given to cleaning up the premises. Make sure that junk piles are removed. Do not allow rubbish to collect. Pile lumber, fence posts, and other materials away from all buildings on the farm.

Once these things are done, proper building construction is essential if the rat problem is to be eliminated. It is of significance that many of the principles of rat-proofing are also fundamentals of good building construction. Rats are notorious for their ability to gnaw their way into buildings. Thus, one of the first essentials in their control is a well-built concrete foundation for all permanent buildings.

Build a good foundation . . .

The depth of the foundation will depend upon the type of soil on which the building is built and the depth to which the frost penetrates. However, as rats will burrow into the ground as much as two feet, the depth of the foundation should be at least two or more feet.

For wood construction, the foundation should extend 12 to 18 inches above ground. Rats are not likely to cling to an exposed vertical surface this distance above ground to eat their way through a wooden wall. Should the wooden wall extend down nearly to the ground where cover in the form of vegetation is afforded, the rat will eat through the wall very quickly.

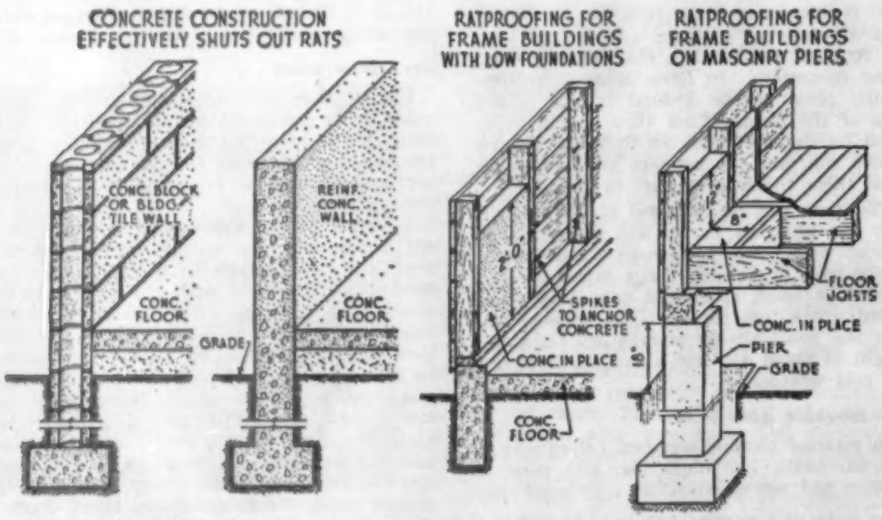
Decay of wooden walls near the ground may take place in a relatively short time making it even easier for rats to go through. If the building walls are made of concrete, masonry, or metal, the height of the foundation wall is not of such great importance.

In cold climates, certain livestock shelter buildings such as poultry houses, calf barns, and hog farrowing houses require heavily insulated walls. Although well-stocked dairy barns do not require as much insulation, it is usually necessary to have at least a double wall. The question then arises as to how rats may be kept out of these wall spaces. If the construction is of masonry, the problem is usually taken care of. With wood, it is a different matter.

Much discussion is heard as to which insulating materials will exclude rats and which will not. It seems that rats are not fussy regarding this and are happy to reside in any wall which they can enter regardless of the material they may find in it.

When home-processed materials such as shavings, sawdust, or straw are used in walls, the recommendation is sometimes made that lime be mixed in to keep vermin out. This practice may sound fine in theory, but it seems to have little effect on rats.

Although it is possible to face the inside



SOUND CONSTRUCTION, using concrete, concrete blocks, or building tile, keeps rats out of farm buildings. In a rat control program, there is no substitute for sound construction.

walls with metal or certain cement-like wall finishing materials through which rats will not gnaw, the real answer to the problem is to exclude the rats from the premises.

Remove rat shelters . . .

Old buildings which are infested with rats present a problem which cannot be solved easily.

Where rats have made extensive inroads into closed or insulated wall spaces, it may be necessary to remove the inside wall and the insulation in order to eliminate the harborages. Frequently interior walls are covered with fibrous insulating materials through which rats cut with ease. This is particularly true in poultry houses.

In these buildings the straw loft, long used as a means of ventilation, offers an excellent home, also. Once infested the only practical thing to do is to remove the straw. After the rats are brought under control and rat-proofing measures are put into practice, insulation can be reapplied.

Rock foundations in bad repair offer fine sources of shelter unless they are carefully pointed up with cement mortar.

On many farms the corn crib is in greatest need of rat-proofing. This can be done by lining the walls and ceiling on the inside and the floor, if of wood, on the underside with hardware cloth or wire netting. If done at the time of construction, wire netting applied beneath the cribbing to a height of 2 feet or more above the top of the foundation is also satisfactory.

An 8-inch wide metal band should then be fastened on the outside even with the top of the wire mesh. This will prevent rats from climbing higher than the top of the mesh and eating their way in. Another method is to build the crib on piers so that the bottom will be at least 18 inches above ground. Nothing which rats can climb should ever be leaned against the crib, and the space beneath it should be kept clear.

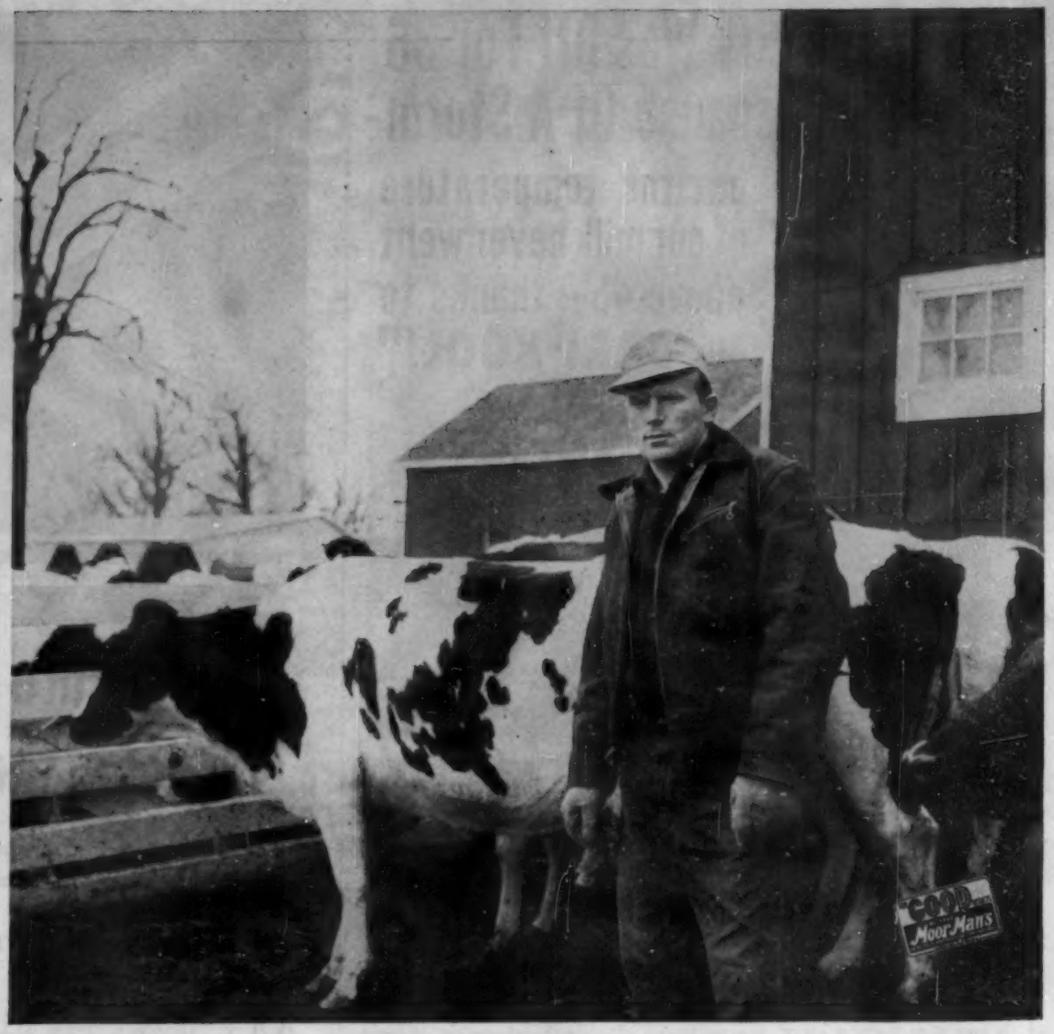
Poison, gas, or trap . . .

After rat-proofing measures are put into practice, many rats in a bad infestation will leave but there will be some left to kill. This can be accomplished by one or more of three methods: (1) poisoned bait, using Warfarin, Pival, or Fumarin, (2) gassing, and (3) trapping.

Poisoned bait and gassing are most effective where large numbers of rats are involved. For small infestations and where poison baits and gassing are impractical, traps may be effective.

You cannot afford to have rats on your farm. Although an effective control program may involve considerable expense, the cost is likely to be small in comparison to damage they do. **THE END**

FOUNDATIONS of concrete cost more but the cut in losses from rats more than pays extra cost.



How Ellis Erb gets top production at low cost

"Three out of the four years since we've been feeding MoorMan's Mintrate* for Dairy Cows, we've had the top producing herd in Du Page County, Illinois," says Ellis Erb. "Butterfat average for the 1954-55 testing period was 514.2 pounds per cow—*and over the past three years averaged 489 pounds.*

"I'm certain Mintrate has helped keep up this average, and has also helped keep our herd in good all-around condition. This, plus maximum use of good quality alfalfa hay and silage, helped me hold my total feed cost down to $1.52 per cwt. milk.

"According to our DHIA records on 24.1 cows for the 1954-55 testing year our average production was 12,855 pounds of milk, at a feed cost of $195.39 per cow. That gave us a return of $321.69 per cow or a total of $7752.55 over feed cost for the herd."

MoorMan's Mintrate for Dairy Cows is a power-packed blend of essential minerals, necessary vitamins and rich proteins. Mintrate, when fed with home-grown feeds, helps make available to your cows more of the milk-making, cow-building power available in grain and forage. Because of this increase in "conversion rate," made possible with Mintrate, production rises while feed costs are lowered.

If your own production rate and feed costs don't measure up with those of Ellis Erb, it's time to add Mintrate to *your* ration. Better call your MoorMan Man today. You'll find him a real helper on feeding problems. Or, write Moorman Mfg. Co., Dept. P6-9 Quincy, Ill., for prices and complete information.

Ellis Erb started building his all-grade Holstein herd 8 years ago. Consistent testing, culling and selecting the best animals in the herd for breeding stock has resulted in a high producing herd. Last year production was 2879 lbs. *more* per cow than the County DHIA average—and feed cost 9¢ *less* per hundred. The Erb farm has been in the family since 1838. Besides building a top-producing dairy herd Ellis has time for many other activities. He is vice-president of the DuPage County Farm Bureau, County Committeeman on the FHA Board. Active in his church.

MoorMan's*

Since 1885—71 years of Friendly Service

Mintrate for Dairy Cows

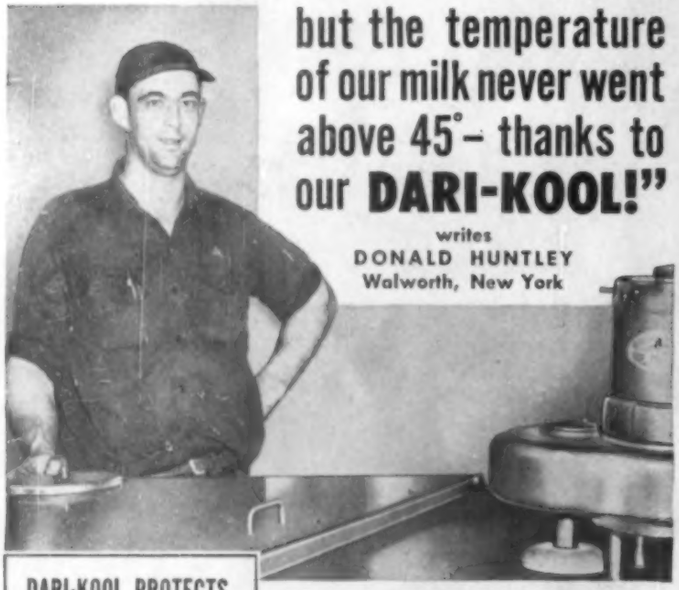
—one of 11 mineralized protein and vitamin concentrates that help livestock and poultry make better use of home-grown feeds.

*Trademark Reg. U. S. Pat. Off.

"Our Electricity Was Off For 36 Hours Because Of A Storm-

but the temperature of our milk never went above 45°– thanks to our DARI-KOOL!"

writes
DONALD HUNTLEY
Walworth, New York



DARI-KOOL PROTECTS THE MILK DURING POWER FAILURES

In case of an electric power failure, Dari-Kool's large reserve ice bank will keep the milk cold for many hours. In a prolonged emergency cracked ice or cold well water may be used to cool the milk. In a direct expansion cooler, the tank of milk may be lost.

"About 18 months ago, when I decided to go to the bulk tank system, dealers from many tank companies visited me at the farm.

I decided on a Dari-Kool for several reasons. (1.) I definitely wanted an ice bank cooler (2.) I liked Dari-Kool for its superior features and stainless steel construction. (3.) The Dari-Kool dealer lives nearby so I was assured of service. (So far I have had little need for service.)

I purchased a 400-gallon Dari-Kool and I am very pleased with it. My milk is cooled to 38° in one hour. Our electricity was cut off for 36 hours because of a storm— but the temperature of our milk never went above 45°— thanks to our Dari-Kool!"

Donald Huntley

DARI-KOOL
BULK MILK COOLERS

Milk may be poured or piped into the cooler

The ICE BANK COOLER that outperforms and outsells them all!

Before you decide on any tank be sure to send for this new

FREE BOOK!

Just off the press!

Get the facts! MAIL COUPON NOW

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Please send, without obligation to me, complete information about Dari-Kool Bulk Milk Coolers.

NAME.....

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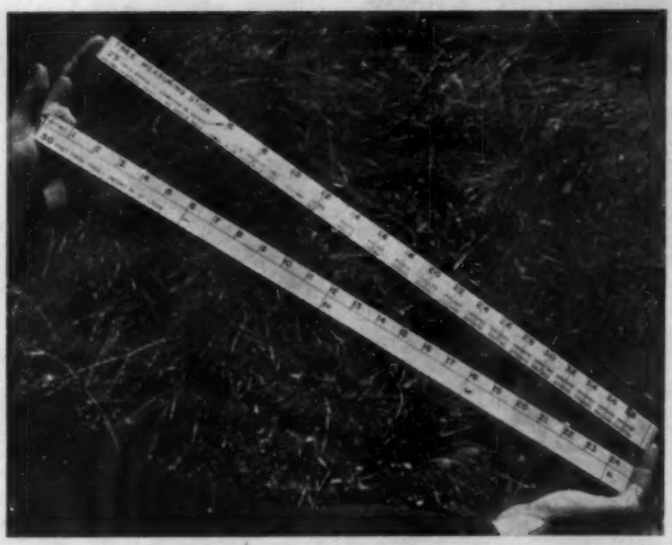


TREE MEASURING STICKS. Top stick shows side used for measuring tree diameters and obtaining tree volumes, and the one on the bottom shows the inch scale and the tree height scale.

Measure your trees and logs the Hoosier way

Whether you plan to saw lumber for home use or for sale, this simple but accurate way can guide you.

by E. J. Loft

MANY a farm woods owner has found that measuring his timber doesn't add to the volume but may add a few dollars to the value.

Most buyers of timber find it much easier to deal with a timber owner who has some idea of the volume of timber he has for sale. Also, when timber is cut for use on the farm it is very helpful to know how to measure trees and logs. In this way only the volume necessary for the particular building need be cut to meet the specified bill of materials.

The purpose of measuring standing trees is to obtain an estimate of the number of board feet of lumber it would be possible to saw from the tree when it is cut. The number of board feet of lumber contained in a tree is known as its **volume.** The essential measurements to arrive at tree volume are diameter of the tree and its merchantable, or usable height.

The diameter is usually measured outside the bark at a point on the tree which is 4½ feet above the ground. Since this point of measurement is at breast height on an individual of average stature, the measurement is called diameter at breast height, and is abbreviated to **D.B.H.** The merchantable height is usually estimated in terms of the number of log lengths which the tree contains.

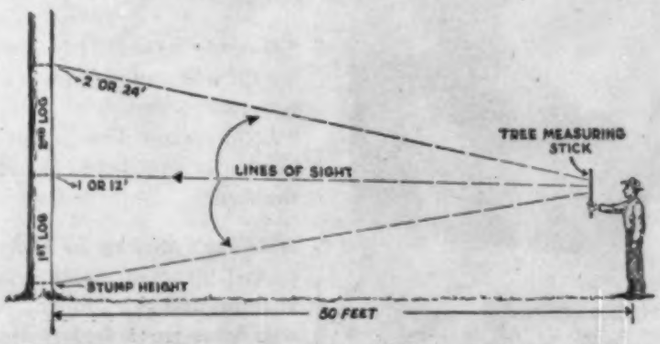
Use of cruiser stick . . .

The favorite tool of the forester for estimating standing tree volumes is the cruiser stick. Although a variety of cruiser sticks are available commercially, Indiana's extension foresters have devised one which is widely used in the state. The scales are reproduced on paper and the paper strips are glued to wooden sticks and covered with shellac or a liquid plastic for waterproofing.

The first step in using the stick is to determine the merchantable height of the tree in terms of the number of 12-foot logs it contains.

To accomplish this the estimator paces off a distance of 50 feet from the tree. Then facing the

The author is extension forester at Purdue University, Indiana.



METHOD of using tree measuring stick to obtain tree heights.

tree, the stick is held vertically exactly 25 inches from the eye and moved up or down until the base of the stick is on the line of sight between the eye and the stump height. Without moving head, or stick, the point at which the line of sight to the upper usable limits of the tree intersects the scale on the stick indicates the number of logs in the tree.

The height scale on the stick is graduated 1, 2, 3, etc., to indicate the number of 12-foot logs.

The second step is to determine the diameter, or D.B.H. For this the stick is held horizontally against the tree with the diameter scale facing the estimator, and at a point 4½ feet above the ground. The stick must also be held at a distance of 25 inches from the eye. It is then moved back and forth until the line of sight past the zero end hits the outside of the bark.

Without moving the head, the line of sight to the right side of the tree which crosses the stick indicates the diameter of the tree. In most cases an average of two diameter readings, taken at right angles, gives greater accuracy.

Estimating the board feet . . .

With the merchantable height and diameter known, the tree volume can be read directly from the stick. Under each diameter on the diameter scale is a block of four numbers. The upper left figure is the volume of a tree of that particular diameter with one 12-foot log; the lower left is the volume of a tree with two 12-foot logs, etc. For example, under the 20-inch diameter mark it shows that a 20-inch tree with one 12-foot log contains 110 board feet. If the 20-inch tree has two 12-foot logs its volume is 200 board feet; with three 12-foot logs the volume becomes 270 board feet, etc.

It should be remembered that the tree volume figures used on the stick are averages from a volume table and so may not be exactly accurate for one individual tree. However, the accuracy increases greatly as the number of trees measured increases, so that for a large number of trees this method provides accuracy sufficient for most practical purposes.

The volume of a log is the estimated number of board feet that the log will yield when sawn into lumber. The log volume is influenced by its diameter, its length, and the extent of defects present.

The diameter is always measured at the small end of the log and inside of the bark to the nearest whole inch. A carpenter's rule or yardstick can be used for this measurement. If the log is not round, the longest and shortest diameters are averaged.

The length of the log is always measured to the next lower whole foot (except for logs cut for special products such as handle bolts, etc.). For example, a log which is 11 feet 10 inches long would be scaled as though it were only 11 feet long, since lumber is always cut to whole foot lengths and it will not cut 12-foot lumber. Also, all logs should have 3 or 4 inches of extra length to allow for "squaring up" the ends of the boards after the log is sawed.

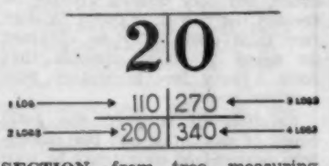
Use Doyle Log Rule . . .

After measuring the diameter and length of the log, the next step is to determine its volume in board feet. For this a table known as a log rule is used. In Indiana, the Doyle Log Rule is the recognized rule. To determine the volume of a log, its diameter inside the bark at the small end is located by moving down the left hand column. Then, by moving to the right the volume is found under the length of the log which has been measured. The log rule usually gives volume for even, 2-foot log lengths.

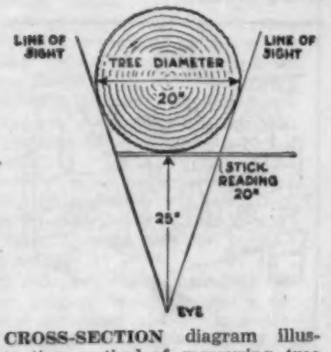
To find the volume of an odd length log, it is necessary only to average the volumes of the even logs above and below with the same diameter. For example, the volume of an 11-foot log, 24 inches in diameter can be obtained by averaging the contents of the 10-foot and 12-foot logs of the same diameter. These would be 250 and 300 board feet, respectively, so the volume of the 11-foot log would be 275 board feet.

When measuring either standing trees or logs the amount of defect will affect volume as well as value. The usual practice with standing trees is to deduct a certain percentage from the total volume of all the trees measured to allow for defect. This percentage is estimated during the measuring of the trees and is a safety factor to allow for visible as well as possible invisible defects.

With logs, the amount of lumber which will be lost due to the defect is estimated, usually in terms of percentage, and this is deducted from the log rule volume to give the net volume of the log.



SECTION from tree measuring stick showing diameter scale above 20 in. and tree volumes in block below for trees 20 in. in diameter.



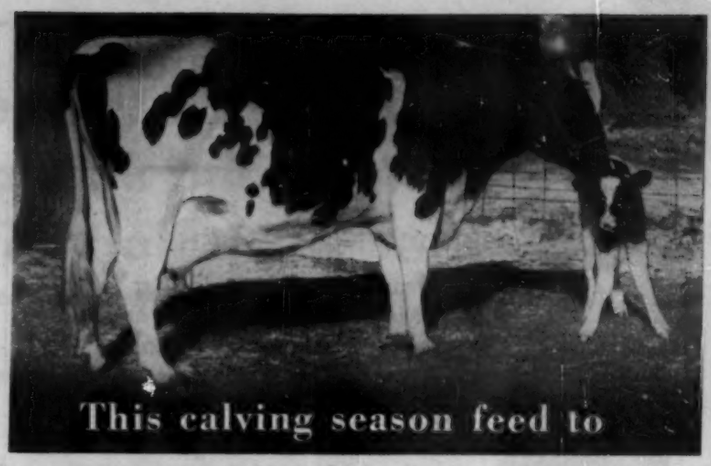
CROSS-SECTION diagram illustrating method of measuring tree diameters with measuring stick.

Starter must be palatable

It is very important that the starter be palatable to the dairy calf. That's the conclusion of University of Georgia scientists who've been studying the problem.

In an experiment at the University of Georgia, dairy calves were fed starters containing either 5, 9, or 13 per cent crude fiber. The higher levels of fiber were obtained by using either alfalfa meal or ground corn cobs and corn shucks.

In the Georgia experiment, the calves received a limited amount of whole milk and all the hay they wanted. The results indicate that neither the level nor the source of the crude fiber appeared to have a major effect on the rates of growth of calves. The rate of growth, however, was very closely correlated with the amount of calf starter consumed.



PREVENT MILK FEVER
with *Fleischmann's*
IRRADIATED DRY YEAST

This season *feed to avoid costly Milk Fever losses.* Feed heavy doses of FIDY Irradiated Dry Yeast—a rich source of vitamin D_2, 5 to 7 days before freshening as an effective Milk Fever preventive.

This inexpensive preventive for costly Milk Fever has been made possible after 15 years of research at the Ohio Agricultural Experiment Station. For the price of 100-200 pounds of milk a cow can be fed to avoid losses due to Milk Fever.

Basically, the Ohio research shows that feeding high levels of Vitamin D_2 for a few days before calving prevents Milk Fever by maintaining blood calcium above the low levels which occur during Milk Fever. This is probably accomplished by increasing the absorption of calcium from the intestinal tract.

How to prevent Milk Fever

1. Feed 30,000,000 units of Vitamin D_2 daily, preferably in two equal feedings, for 5 to 7 days before calving.
2. Discontinue feeding at the end of 7 days.
3. If calving occurs before 6 days, feeding may be continued for one more day.

Fleischmann's FIDY Irradiated Dry Yeast, Type 142—F supplies 30,000,000 units of Vitamin D_2 in 7½ ounces.

When to start feeding FIDY

A cow is protected from about the 4th to the 9th day after FIDY feeding is started. Start feeding FIDY so calving will occur during this 5 day period. This provides leeway in estimating the calving date.

Which cows to feed

Drs. Hibbs and Pounden of the Ohio Agricultural Experiment Station recommend *"— this method of prevention would be applied most advantageously to cows which have previously had Milk Fever attacks, or mature cows in herds where the incidence is especially high."*

Safety of this method

Extensive studies made by the Ohio Agricultural Experiment Station show that the feeding of 30,000,000 units of Vitamin D_2 per day for not more than 7 days offers a simple, safe and effective method for Milk Fever prevention. *Remember, however, that the feeding of heavy doses of FIDY is a Milk Fever preventive. For diagnosis and treatment of Milk Fever, call your veterinarian.*

How to get FIDY for Milk Fever prevention

Special Milk Fever Preventive mixes are now available from many feed dealers containing FIDY Type 142-F a source of Vitamin D_2 used in the Ohio tests. Or, FIDY Type 142-F can be added as an ingredient in your custom or home mixed feeds. Veterinarians are also equipped to supply your needs for this effective Milk Fever preventive. If your own feed dealer or veterinarian is not as yet prepared to take care of your needs, please write us direct.

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Tells how FIDY Irradiated Dry Yeast can help you avoid Milk Fever and resultant lowered milk production and possible loss of valuable dairy cows. This valuable informative leaflet is free! Send for your copy now. There is no obligation. Address Desk HD-96

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Company C

Company D

Company E

Company F

Company G

Company H

Company I

Company J

ENOUGH IS ENOUGH!

For years we've been told that Calf Manna is too expensive and for years we've been saying, "Look at our records" and "Look at our customers' records."

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NOW, an independent research corporation comes up with positive proof...

IT COSTS LESS TO FEED CALVES TO FOUR MONTHS ON THE ALBERS CALF MANNA-SUCKLE PLAN than any of ten plans tested including milk feeding.

Shown at left are the actual results of the research done by Management and Marketing Research Corporation of Los Angeles. The Albers Calf Manna and Suckle plan saved up to $14.96 over 9 other leading calf starters.

The cost of raising calves was from $21.06 on the Albers Plan to $36.02 on the least profitable plan. These costs include all grain and hay. Does it pay to feed Calf Manna and Suckle to your calves?

YOU BET IT DOES...and, you'll have larger, healthier calves, deep bodied calves, and calves with the capacity to consume large quantities of roughage for more economical production as adult cows. It takes so little Calf Manna to do so much. The calf is on dry feed, inexpensive roughage, days ahead of any other program. And scours are forgotten.

Whether you're figuring out-of-pocket costs or in-the-pail profits, Albers Calf Manna and Suckle program just can't be beat. Ask your feed dealer for all the details and start your next calves the Albers way.

For Complete Details write
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1016 Central Street
Kansas City, Missouri

Do you get mad about bug counts?

You are only human if you do. But what do bacteria counts mean? This article will give you the answer.

by J. M. Jensen

IF YOU get hot under the collar when the health department notifies you of excessive bacteria counts in your milk, you are quite normal. All decent humans are reproachful of reports that reflect on their sanitary practices.

Bacterial counts are far more sensitive measures of milk quality than are taste and odor. Tests have shown that bacterial counts in milk may range from 1.5 to 10 million per milliliter before the off-flavors caused by bacteria could be detected. (There are 946 milliliters in one quart.) Although the off-flavors were not detected at those levels, chemical tests showed that certain milk constituents were impaired.

High standards of production are attained by measuring quality. Dairy laboratories of both health departments and dairy plants make many bacterial tests on milk samples, thereby compiling for each producer a history of quality achievement.

Inspectors and fieldmen examine these records and advise producers when excessive counts or sudden increases occur in their milk shipments. Farm inspections are made following these reports.

Bacterial counts are made by one of two methods; the direct microscopic, or by plate count. The direct microscopic method requires the making of a smear (equivalent to 1/100 milliliter of milk) spread uniformly over a square-centimeter area. The milk is dried, defatted, and stained. Bacteria are counted in each area examined under a microscope.

By examining milk under the microscope it is possible to distinguish the bacteria as to size and shape. This furnishes a clue to possible sources of contamination. These reports will usually refer to poor cooling, utensil contamination, mastitis, and so forth. They should be considered as *possible,* rather than *absolute,* reasons for indicated defects.

Standard plate counts are made by causing bacteria in milk to grow on agar until visible colonies are produced. Milk is diluted to an extent necessary for a good distribution of colonies.

Agar medium, containing nutrients required for growth of bacteria, is mixed with the diluted milk. The plates are incubated at 95 degrees and held for 48 hours at which time growth-colonies are counted and the bacterial count determined.

These counts are stated as bacterial rather than bacteria counts because all the bacteria in a sample of milk are not accounted for. Higher counts may result by using different agar media, lower temperature, and longer incubating period.

Theoretically, on the same milk a plate count should be lower than the direct microscopic count. In actual results, however, higher bacterial counts are usually obtained by the plate method.

The plate method may be used on producer samples of both raw and pasteurized milk. The term "total count" usually is applied to plate counts on raw milk samples. "Laboratory-pasteurized plate count" or "thermoduric count" are terms used synonymously.

By the standard plate count and by the direct microscopic clump count, the bacterial tolerance for raw milk used in Grade A supplies is 200,000 per milliliter. Pasteurized milk is limited to a bacterial count of 30,000. Local authorities and dairy plants may have limits for thermoduric counts ranging from 1,000 to 1,500 per milliliter.

A distinction between *laboratory pasteurized* milk bacterial counts and counts made on *pasteurized* milk is perhaps not recognized. Bacteria present in laboratory pasteurized samples are those which have endured pasteurization, while at least some of those present in pasteurized milk may be due to contamination and growth following pasteurization.

High thermoduric bacterial counts generally are traced to contamination of the milk by unclean utensils. The bacteria most frequently responsible are associated principally with soil, fecal matter, feeds, and the skin of animals. They gain entrance to milk from unclean equipment, especially rubber parts of milking machines, milk filters, and milk cans.

Farm cooling has little effect on the laboratory pasteurized milk count, but poor cooling greatly increases the raw milk count. A high raw milk count may be obtained on many producer samples that have a very low laboratory pasteurized count.

Relationship between the total count of raw milk and the laboratory pasteurized count may be seen in the following table. Bacterial counts are shown on the milk from one producer during a seven-month period, beginning in November and ending in May.

"Now it's pasteurized, homogenized, and vitamin fortified . . . I feel like a failure."

The author is associate professor of dairy manufactures at Michigan State University.

Standard plate counts of raw and laboratory pasteurized milk from one producer during a seven-month period

Date sampled	Bacteria per milliliter: Raw milk	Laboratory pasteurized	Per cent thermoduric
Nov. 13	9,000	400	4.44
Nov. 20	4,000	300	7.50
Dec. 4	7,000	1,300	18.57
Dec. 19	21,000	1,600	7.62
Jan. 8	19,000	300	1.58
Jan. 30	11,000	300	2.70
Feb. 5	10,000	2,400	24.00
Feb. 19	16,000	500	3.12
March 20	8,000	800	10.00
March 27	30,000	400	1.33
April 10	88,000	4,000	4.54
April 24	6,000,000	900,000	15.00
May 8	15,000	100	0.66
May 22	20,000	700	3.50

It will be noted the milk from this producer had very fine bacterial quality, except for the month of April when one of the samples had a count of 6 million per milliliter in the raw milk and 900,000 after laboratory pasteurization.

A farm visit revealed that during April the producer's hot water heater was "out of commission" and only cold water detergent solution had been used for washing. While the milker was rinsed with chlorine solution before use, obviously that treatment was insufficient to produce effective germicidal action.

These results, and many others that could be presented, show no relationship between total raw count and laboratory pasteurized counts.

Abundant data are available which show that high laboratory pasteurized milk counts result because of utensil contamination. An outstanding example, showing the influence of contamination from milker rubber, is presented in Circular bulletin 218 from Michigan State University and is reproduced here in the following table:

Bacterial count of milk before and after boiling milker inflations in lye solution

Sample	Bacteria count in milk: Before lye-boiling Raw	Before lye-boiling Pasteurized	After lye-boiling Raw	After lye-boiling Pasteurized
1	300,000	440,000	1,100	200
2	620,000	510,000	5,100	300
3	240,000	130,000	1,100	100
4	490,000	460,000	2,000	100
5	47,000	15,000	7,200	2,000
6	240,000	180,000	1,400	200
7	230,000	150,000	1,200	200
8	300,000	250,000	3,300	100
9	250,000	180,000	1,500	200
10	140,000	120,000	1,500	100
11	150,000	140,000	1,800	500
12	100,000	90,000	900	500
13	330,000	140,000	1,500	100
14	310,000	170,000	3,400	500

Bacterial counts listed in the table are from samples of milk taken directly from milker pails during the milking of the same herd in a period of two successive weeks. The milk drawn before lye boiling of milker inflations yielded very high raw and laboratory pasteurized counts.

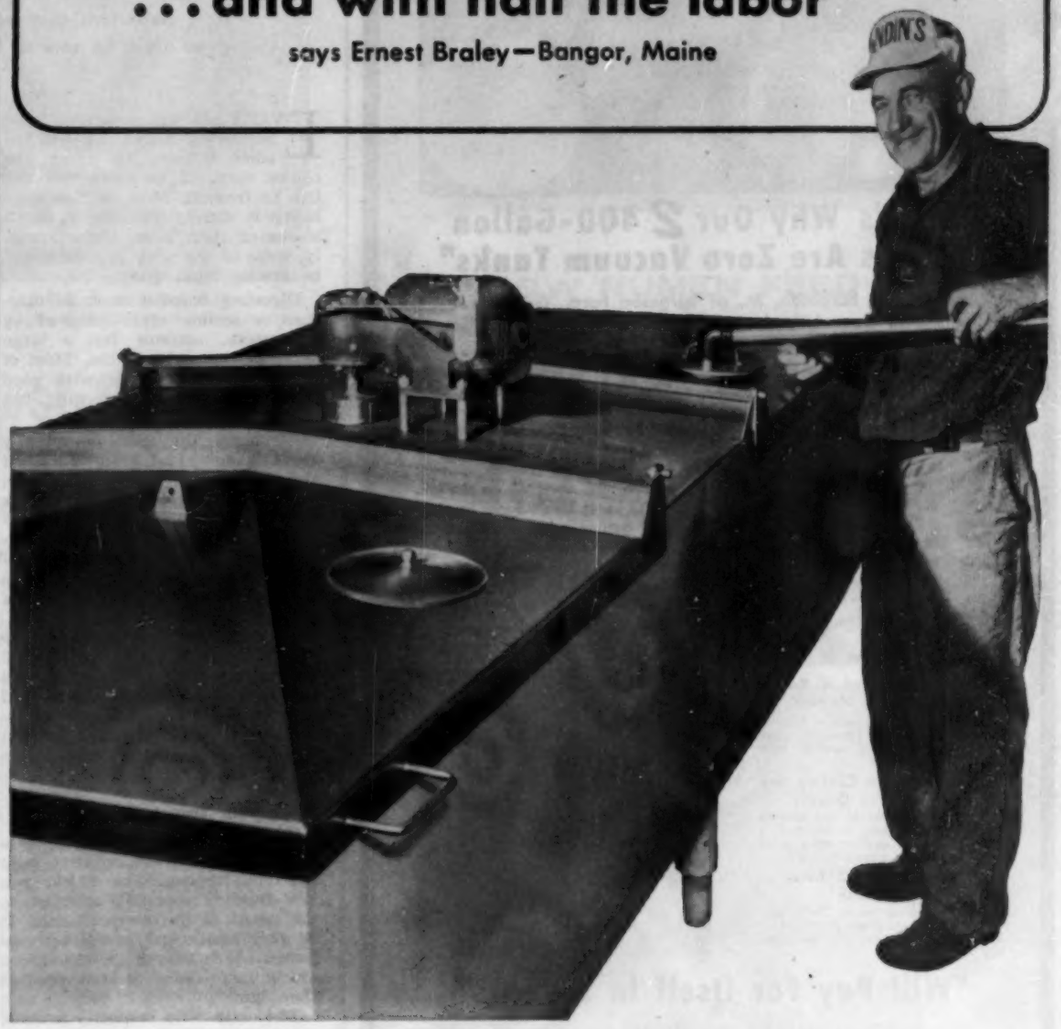
A large number of the bacteria survived pasteurization. After the milker inflations were given a severe bactericidal treatment, very low bacterial counts were obtained.

Reports of bacterial counts sent to producers may appear to be too specific in regard to the cause. However, when bacterial counts are high, the inspector will call attention to poor cooling and unclean utensils, knowing that one or both are usually at fault.

If these reports momentarily fire your temper, remember that a decisive inspection system is necessary where, literally, an army of farmers is producing tank loads of milk for a city.

"I get 26¢ per cwt. more for my milk using a bulk milk system ...and with half the labor"

says Ernest Braley—Bangor, Maine



Since he installed his 500-gallon, Stainless Steel bulk milk tank two years ago, Mr. Braley has averaged 400 gallons each pickup (every other day). The tank holds the milk at 35°, and it takes only about 10 minutes to transfer the milk from tank to tanker.

Mr. Braley says, "The bulk milk system has cut our milking time in half—from about 4 man-hours to 1½ man-hours. Now, it's a one man job with 40 Holsteins. We save 10¢ per cwt. on hauling alone (25¢ vs. 15¢). Butterfat runs about two points higher, so that nets an extra 16¢ per cwt. We also save quite a bit on stickage, and bacteria count is low."

Why not talk to your dairy about the many advantages of bulk milk handling? You make more money, the dairy makes more money, and everybody saves time and effort. It's the low cost, modern way to produce milk, and tanks made from USS Stainless Steel have been proving it all over the country. Send coupon for the free booklet that answers your questions about this money-making milk handling system.

See The United States Steel Hour. It's a full-hour TV program presented every other week by United States Steel. Consult your local newspaper for time and station.

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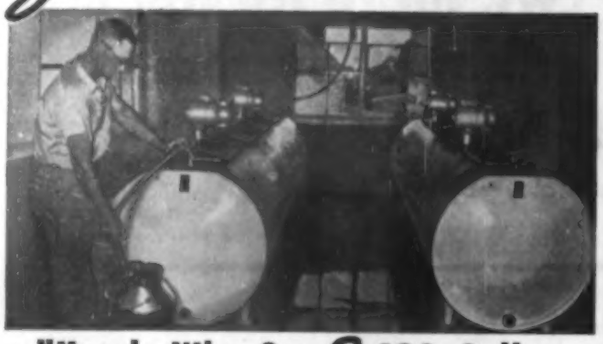
Zero BULK TANK



"Here's Why Our 2 400-Gallon Tanks Are Zero Vacuum Tanks"

says T. A. Burgeson, Jr., of Burgeson Farm, Grandview, Missouri. One of the largest producers of quality milk in the Kansas City Area, milking 60-70 cows.

"We plan to go to direct cow-to-tank milking in the future, and we know our Zero Tank will work fine that way without having to buy expensive releasers, milk pumps, etc. Until we do though, we're using Zero's Super Strainer and getting vacuum-refrigerated milk. We don't have to lift or pour milk any longer with the Zero Super Strainer. It works just like sucking milk through a straw . . . a real labor saver."

Cleaning is Easy and a Real Time Saver Over the Old Methods.

"You don't need any special schooling to clean a Zero Tank. It's a lot easier than cleaning several milk cans."

Vacuum and Fast Cooling Has Improved the Quality

"Zero's combination of fast cooling and positive vacuum is the best I know of. We're getting more good milk and more money for it."

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"After changing to a Zero, our electric bill went down $12 the first month. Our Zero has cut our milking time, too."

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"The way Zero is increasing our profits and cutting our costs, we figure it will pay for itself in three years. That's a mighty good investment for any dairyman. And our two Zero tanks are so well-built, they'll give us trouble-free service for years to come."

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FEEDING

by N. N. Allen

How will you raise calves?

It is important that your calves get off to a good start. Be sure to feed plenty of colostrum.

EVERY cow was once a calf, but not every heifer calf will become a cow. Of every 100 calves born, 12 or more will not live to freshen. Most of this mortality is during the first 2 or 3 weeks of their lives. Unfortunately, some of the very best ones will be among those dying.

Digestive troubles such as diarrhea or scours, often followed by pneumonia, account for a large share of the early deaths. Most of this loss is preventable with good sanitation and careful feeding, but it does take meticulous care.

At birth the calf is actually about 9 months of age. The heart and the nervous system have been working during nearly all of this time, but the lungs and the digestive organs have not had to function. The oxygen and the food nutrients have been transferred from the blood of the mother to that of the calf.

At birth all of this changes. The calf is now on its own. Its own lungs must furnish the oxygen and its own organs must digest and prepare the food. This new digestive system is being put to its first real test, and care is needed during the breaking-in-period.

Start with colostrum . . .

Good calf feeding always starts with the colostrum or first milk from its mother. This thick, yellow fluid is specially adapted to the needs of the newborn calf. It is very easily and completely digested. It is very high in solids, a much more concentrated product than later milk.

The extra solid is mostly protein, not casein which makes up the curd of milk, but globulin, the type of protein found in the blood. This protein has the property of forming antibodies which will destroy infectious bacteria. During the first 24 hours, the calf absorbs much of this protein without breaking down its large molecules. It acquires a defense against infection which carries it through until it can build its own antibodies. This is probably the major reason that it is very hard to raise a calf without at least one good feed of colostrum.

Another is the fact that the colostrum is very high in vitamin A value, which may run as high as 50 times that of the later milk. Vitamin A is very important in giving the tissues ability to resist invasion by disease germs.

So, by all means, we should see that the calf gets plenty of colostrum. That from the first milking is the most valuable. In three or four days the milk is practically normal and is salable.

Save surplus colostrum . . .

The cow will usually produce more colostrum than the calf can take. The surplus should be saved, by freezing if necessary, and fed as long as the supply lasts. There is no better calf food known. I have kept colostrum for a week without freezing, and for more than a year frozen, with no apparent loss in feeding value.

Since there is no market for the colostrum, there is a saving by using all of it for the calves. It is my prediction that we may see a change in this situation. Colostrum is one of the richest natural sources of the protective proteins. Research of which you read in this publication a few months ago has shown possibilities of producing antibodies against specific human diseases in the colostrum of cows. Some doctors have found indications that it may be very valuable in the formula for young infants, at least under certain conditions.

It will not be surprising if we see this wonderful food which now has no market become a premium product under carefully supervised production. If so, it will be a real challenge for us to meet in raising calves.

How will we feed?

Another of our baby-calf problems is how to feed. The natural way is for the calf to nurse the dam, but this doesn't work in the modern dairy. Many dairymen leave the calf with the dam until the milk is salable.

Others separate the calf from the mother at once and feed the colostrum. This requires more work, but the calf learns only one way to drink, and is easier to teach than if it has been nursing. It is probably better for the udder of the cow, too. There is better control of the amount the calf eats. It permits better planning to feed all of the colostrum, using the richest first-colostrum until all is fed, then using the later colostrum.

In favor of nursing the cow, fresh milk is insured; the calf can feed oftener; the temperature of the milk is always the same; and, of course, it saves work. I haven't said that the milk will be cleaner. That depends. I have seen farmers who cleaned and sterilized the calf pails religiously, but who didn't even bother to wash the first "pail" from which the calf feeds.

Why not scrub the teats and udder thoroughly before the little fellow gets its first meal? Then lots of clean, fresh bedding will help to keep them clean. Dirt and germs from a calf pail are no worse or better than dirt and germs from soiled teats.

There may be another angle in favor of nursing. Some work at Minnesota has indicated that a calf carrying an infection, let us say for scours, will transfer enough of the germs to the udder that protective antibodies build up in the milk and are ready for the calf at the next feeding.

Both plans work and we will find many good dairymen on both sides of the question, so start pail-feeding at once, or leave the calf with the cow as you prefer, but do a careful job.

FREEZE-PROOF tank shown here has 6-inch wall insulation and a thermostatically-controlled heater submerged under wooden cover.

Build a frost-free water tank

A well-insulated tank conserves the heat that is in the water as it comes from the ground.

by D. W. Bates

DAIRYMEN using loose-housing usually have watering facilities in a cold building or outdoors. Maintaining an adequate supply is often a problem.

There are various types of electrically-heated drinking cups which can be used. Many of these, however, have a rather limited capacity. For this and other reasons the open tank is preferred by many dairymen, particularly those with large herds. With the open tank, freezing may be a problem

It is common practice to use a heater which burns wood or oil to keep the tank open. Such heaters usually are satisfactory, but require considerable attention.

A frost-free open tank which makes use of the heat in the water and which requires little or no supplemental heat can be quite easily built.

It must be of double wall construction with four to six inches of insulating material between the walls. The tank can be made of concrete, metal, or wood as long as it is constructed in such a way that insulation can be kept dry.

Water should be piped into the tank through the bottom and the flow controlled with a float valve. The part of the tank in which the float is located must be covered.

As further protection against freezing, a divider made of two-inch thick lumber should extend the width or length of the tank, from the cover down into the water at least six inches. This divider prevents air movement around the float valve and is a big factor in preventing freezing.

Water as it comes out of the ground in the winter is usually 40 to 50 degrees in temperature. By conserving this heat in the insulated and partially-covered tank, ice formation is prevented.

A number of dairymen in central Minnesota having such installations report that on a cold morning a scum of ice may be found in the exposed part of the tank, but that it is never sufficient to prevent the animals from drinking. It soon disappears.

Artificial heat necessary . . .

In extremely cold areas some supplemental heat may be necessary. This can be provided by submerging a suitable electric heating element of 500 to 1,000 watts capacity in the tank. This heating element should be controlled by a thermostat located near the float valve and set at about 35 degrees.

During the day when the cattle are drinking, the heating element is not likely to be on at all. At night it will be on periodically during extremely cold weather. Although no figures are available as to the amount of electricity such a unit requires, farmers who have them report that they noticed no appreciable increase in their electricity bills after the tank was put into use.

The size of the tank may vary. One that is 15 to 18 inches wide and 3 feet long is usually adequate. The float valve may be located either at one end or along one side.

If the tank is to be used in an exposed area where there is danger of the supply pipe freezing, the portion of the pipe which is above the frost line can be wrapped with electric heating tape.

Keep insulation dry . . .

It is of great importance that the tank be constructed in such a way that the insulation can be kept dry. Unless the inside wall is made of metal, a vapor barrier should be placed between it and the insulation. Having the inside wall slightly higher than the outside wall is desirable.

A tank as described, which will supply the cows with water as fast as they want to drink it, can be built at a reasonable cost.

The release of many valuable nutrients in hay, silage and other roughage depends on the activity of rumen bacteria—the "bugs" that help cattle break down and digest all kinds of home-grown feeds.

That's why modern beef and dairy supplements contain Du Pont "Two-Sixty-Two" feed compound—a highly efficient form of urea nitrogen. As a protein source "Two-Sixty-Two" usually costs less. And by stimulating rumen bacteria, it adds an important benefit to feeds for sheep and cattle.

As the "bugs" convert "Two-Sixty-Two" to protein, they multiply faster and work harder. Feed energy, otherwise wasted, is unlocked from stems and stalks to produce milk or make beef. Check with your feed man. Be sure your supplement contains "Two-Sixty-Two"—to help you get the most value from the roughage you grow.

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FEED COMPOUND

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BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

EDITORIAL COMMENT

BOUQUET TO EASTERN LEADERS

PLEASING, indeed, is the announcement of the formation of a new farm committee to attack low dairy farm income in the East. Presidents of farm organizations in New York, New Jersey, and Pennsylvania are now meeting to reconcile their differences and seek a solution to the low income problem on eastern dairy farms.

Significant is a statement of Leland Smith, chairman of the group, when he stresses the need for "full and accurate information" to both dairymen and consumers. Let's explore this point.

Our experience has revealed that most differences between farm groups arise from the prevalence of misleading or inaccurate information upon which decisions and policies are based. Once farm organization leaders have reached a common understanding of the facts, particularly of dairy economics, agreement usually follows quite rapidly. It is folly, however, to try to reach agreement on matters of policy, if those decisions are based on conflicting evidence.

The primary task, then, of any such group as the eastern leaders is to seek out the truth on such questions as demand-price ratios and the response of production to price. Once they gain a common understanding of fundamental economic responses to price, they will be in a far better position to reach agreement on policy.

Naturally, we look with great favor on continuing conferences such as are proposed in the eastern states. It reflects a high level of agricultural statesmanship which, in the past, has been all too significant because of its absence.

HOW HIGH SHOULD PRICE BE?

A SUCCESSFUL businessman told us once that, regardless of the level of income, almost every employee thinks that a fair income would be about 10 per cent more than he is getting now. Once he receives such an increase, then the fair level would be 10 per cent beyond the new level.

If we were to inquire as to the desirable level of milk prices, we expect many farmers would be happy with a 10 per cent increase in price. The question then is rarely, if ever, satisfactorily resolved because of the human desire to earn or receive a little bit more.

As we look at dairy prices today, and as we discuss this question with farmers and farm leaders in all sections of the country, it is rather commonly reported that manufacturing milk prices should be about 50 cents per hundredweight higher than they are. We aren't prepared to report upon what basis those estimates are made.

This leads us to the question of price supports, parity calculations, and the resultant dairy program.

In our opinion, the prevailing price should return the reasonably efficient dairy farmer satisfactory interest on his investment, a labor income comparable to industrial wages, and a bonus which might be considered a return for his risk and managerial talent. This may sound Utopian to some; impractical to others.

Actually, such a price bench mark would be wholly unsatisfactory to many dairymen because of their low-producing cows, their inefficient management; in short, their lack of business skill. It should not, however, be our national price policy to subsidize or foster inefficiency. A premium should always be available to reward those of skill and exceptional talent.

Congress has asked the Department of Agriculture to make a study of the methods of calculating parity for farm commodities. If properly done, this is a monumental task. We do not envy those charged with the responsibility.

We would be interested, however, in having the department consider the possibility of a new parity concept for dairy products. Admittedly, some arbitrary decisions would have to be made with reference to levels of efficiency and defining the "reasonably efficient dairy farmer." But, let's look back at our present parity concept. In the founding of that concept an arbitrary decision was made, too. The years 1910-14 were arbitrarily selected as a base for future parity calculations. Making arbitrary decisions need not be reason for failure to consider such an alternative approach.

DROUTH AND WAR NO SOLUTION TO FARM SURPLUSES

IN LATE July we visited an area which was undergoing its fifth consecutive year of drouth. The only green coloring to be found on farms was in the light green pallor of the leaves of trees. Cornstalks stood stripped and dead in arid fields. Alfalfa hayfields were nothing more than a pincushion of dead plants, stiff and leafless.

Wells were running dry and farmers were sinking deeper shafts to pick up deeper-running veins. In hundred-degree heat the only signs of motion were the swirls of dust rising above the brown and yellow countryside.

As we visited those farms, we were reminded of the oft-repeated comment that a good drouth would settle our surplus problem and our prices for milk and cream would improve. To us, this is just next to saying that the solution to our farm price problem is another war.

Those who speak of drouth and war in hopeful terms speak either in ignorance or malice.

Surely, we are not so pauperized in intelligence that we cannot find any other solution to the national dairy problem. A drouth is a tragedy, not a cause for rejoicing by those in more favored rainfall areas. The brotherhood of man does not condone one man's joy and profit at the expense of another's misfortune.

Let us be ashamed of any thoughts we might have had concerning the benefits of a drouth. Let us solve our dairy income problem within our economic laws, not rely upon the undependable and cruel vagaries of nature.

A story is told how someone once asked Freud what one must be able to do in order to be genuinely mature. Instead of the expected lecture, Freud's reply was brief and curt. "Lieben und arbeiten," he said. To be truly mature one must be able to **love** and to **work.**

—Edw. Jos. Schoen, Jr.

WANT COWS THAT WEAR WELL

PREVIOUSLY we have stated our belief that our sire selection techniques should be refined considerably. It is not enough to know that the daughters of a bull produced so many pounds of milk and butterfat more than their dams. We have called attention to the importance of ease of milking, freedom from mastitis, long life, temperament, and type.

Recently, during a trip into the South, we heard a very competent artificial breeding technician express concern akin to ours. He feared that the pressure for high proofs was placing a premium on early maturity. Further, his observations led him to believe that these early-maturing daughters were not standing up well in later years.

True, early-maturing 2-year-olds have records which can be converted to high maturity values. As such, they compare favorably with the production of the dams. If the udders on those early-maturing 2-year-olds cannot take the strain of early high production, however, mastitis and broken udders as well as other problems develop. After two or three lactations these fast-maturing females move out of the herd to be replaced by younger animals.

When we consider the cost of raising a heifer to the time of her first lactation we begin to appreciate the heavy overhead that heifer carries into her producing life. She must stand in the milking string and produce for at least two or three years to pay the cost of her raising. Only after she has repaid that investment can we really begin to enjoy the full profits we should expect from a good dairy cow.

While we appreciate that it is entirely possible we can breed early-maturing lines of cattle which do have the strength and stamina to wear well into maturity, we doubt that many such lines of breeding are well-defined and recognized today. If our doubts are justified, and we believe they are, we are inclined to favor those lines of breeding which provide us with 2-year-olds producing 350 to 400 pounds of butterfat, but who continually show improvement in production and type through to the age of 5 or 6 years. Then, if they have reached the 500- to 600-pound levels with sound udders and strong bodies, we believe the prospects are much better for those animals to produce on to the age of 10, 12, and 15 years.

As we visit farms throughout the country, we are constantly impressed with these cows who have passed their sixth year because we have a definite feeling that they are the money-makers in the herd providing, of course, their production level justifies their presence.

In 1906, W. D. Hoard said:

The most important man in this country today for the preservation of its liberties and its integrity, is the farmer. But he must see his duty. He must be blinded no longer with party zeal and ambition. He must pull down the men who are more loyal to trusts and corporations than they are to him. He must see that his liberties as a citizen are at stake; that when he is successfully enslaved as a farmer, that will be the end of American liberty.

Questions from Our Readers

Questions on social security

Two brothers farm in partnership. Each averages less than $1,200 a year in net income. The older brother will be 65 in December. Both have paid and will have paid social security tax in 1955 and 1956. Can the older brother draw benefits in 1957 (more than $400 in net income) or must he wait until his partner is old enough to draw also?

This same farmer will have a larger herd of cattle in 1957 and 1958, which will mean a larger net income. If he prefers to wait until the end of 1958 to apply for benefits, is he allowed to base his benefits on net earnings he had in 1957 and 1958 or is he compelled to apply for benefits on the small income he had during 1955 and 1956?

Iowa **G. M.**

When two brothers are in partnership, each partner is a separate individual as far as social security benefits are concerned. The partnership is only a business organization from which each individual receives his income.

When either partner reaches 65 years of age and has contributed into social security the required number of months, he should consult his local social security official to sign the necessary papers to enable him to receive monthly payments. He must make application and furnish proof of his age as the social security officials do not make payments until requested.

If one's share of the farm income in 1957 and 1958 is more than $1,200 and he is under 72 years, he will lose monthly benefit payments for each $80 his self-employment income exceeds $1,200. No monthly payments are made if his income exceeds $2,080.

There is some arrangement whereby the social security official will eliminate some of the low income years and average the highest income years. This will increase monthly benefit payments.

A retired farmer has wages averaging $400 a year. When he has worked the required number of years for coverage, what will his monthly benefits be? How much for $600 a year average?

Michigan **W. B.**

A retired farmer with the minimum of $400 income would receive the minimum monthly benefit payments of $30 per month. If he had a yearly income of $600, monthly benefit payments would still be $30. Benefit payments are 55 per cent of the first $110 of his monthly earnings, to which is added 20 per cent of the next $240.

—I. F. Hall

Blacktop cow yards

A year or so ago you had an article on cow yard paving with asphalt. Since we have asphalt paving machinery working on our highway, would like more information on asphalt used in cow yards.

We know it is no cheaper than cement, but they say it is three times as strong, so we're wondering how thick it should be when laid with a regular vibrating machine? Do cows slip much on this type paving? Do tractor chains do any harm? Does frost break it up?

Nebraska **W. D. H.**

A 2-inch thickness of asphaltic concrete, when placed on a proper base, is sufficient for a cattle yard. The thickness of the base required will depend upon the kind of soil on which the paving is to be done.

Properly-laid asphaltic concrete presents a relatively skid-free surface. Tractor chains will not harm it under any usual operating conditions. Frost break-up is not a problem when the paving is placed on the proper base.

The sub-base and/or base course materials should consist of good-quality crushed stone, graded gravel, or other acceptable local materials such as cinders, slag, crusher run stone, quarry waste, shales, or pitrun gravel. Materials should be well-graded from coarse to fine with not over 8 per cent passing through a No. 200 sieve. The base should be spread uniformly and compacted with a heavy roller.

A sand cover of from 2 to 5 pounds per square yard or a thin application of shavings or sawdust should be broadcast over the surface of the pavement after rolling.

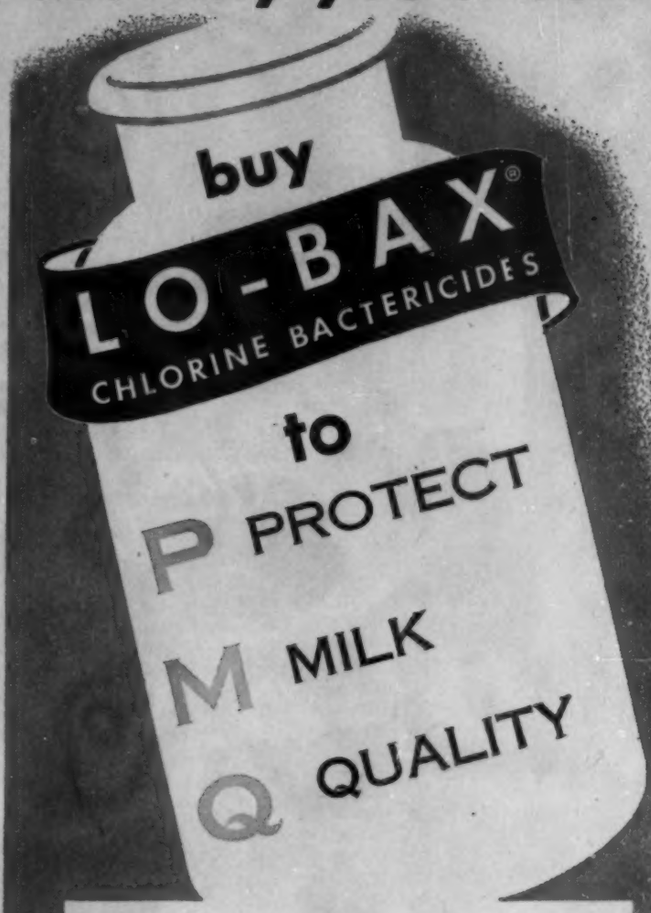
For rapid and proper drainage, a slope of not less than 1 inch in 10 feet is recommended. This can be accomplished by either sloping the pavement toward the center to a gutter or by making a crown in the center.

—D. W. Bates

ED . . . and EMMA

"Now remember, no arguments? When Ed says it isn't gonna rain — it isn't gonna rain!"

see why you should



Perhaps you never considered it in these terms, but an entire year's supply of Lo-Bax chlorine bactericide costs less than a single rejected milk shipment. All the more reason for protecting your milk production with Lo-Bax!

More than that, Lo-Bax is now a better investment than ever before. *Clean, white, granular* and *stable*, Lo-Bax is the finest *dry* product of its kind on the market. It pours easily, dissolves quickly, rinses freely and provides quick, effective bacteria kills. Yet for all its powerful effectiveness, Lo-Bax is exceptionally gentle on cows' sensitive udders and milkers' hands. And now, for added convenience—for easy, accurate measuring—a handy spoon is included in every Lo-Bax bottle.

Quality counts! You can't buy better protection than Lo-Bax offers for your "Grade A" production at any price. Lo-Bax is available in two forms—Lo-Bax Special and LoBax-W (containing a special wetting agent). For complete information and for samples, fill out and mail the coupon today.

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Please send information on Lo-Bax chlorine bactericides and the name of my local supplier.

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They collect $34.86 more profit per ton of feed

Charles and Daniel Ernst's D. H. I. A. records tell the story – $184.38 more milk profit per month

HUMAN nature resists change. And jovial Charles and Daniel Ernst admit to being about the "humanest" dairymen in the Meadville (Pa.) area when it came to changing dairy feeds. Understandably so. They were happy with the feed they used and skeptical of feed claims. So it took 2 years before they decided to put Larro SureMilk to test.

When they did, the first 10 months with Larro SureMilk 32 produced enough extra profits over feed costs (compared with the *preceding 12 months*) to equal the down payment on a new car. *And milk prices were 22¢ lower during the Larro test period!*

Here's the story of extra profits with SureMilk — taken from the pages of Ernst's own records and D.H.I.A. herd books. It compares 10 months on Larro with the preceding 12-month period.

Extra profits over feed costs, converted to a 12-month basis, averaged $184.38 per month. Extra profit per ton of feed — $34.86. Extra milk per ton of feed — 1,094 lbs. Extra fat per cow — 11.87 lbs. Feed efficiency — an extra .54 lbs. milk from every pound of grain fed.

Now that's real profit over feed cost.

And the extra production with SureMilk 32 is exactly the kind that showed up recently in a coast-to-coast survey of 100,000 actual milk production records. This survey shows that 2 out of 3 dairy cows actually undermilk as much as 20% . . . that milk production can actually be boosted by up to 2,000 lbs. per lactation by switching to SureMilk.

The reason: SureMilk is loaded with extra milk-making power. It contains every nutrient that hard-working dairy cows need to milk at top capacity — to stay healthy and milk their best.

Your Larro SureFeed dealer has the whole money-making story on this modern dairy feed. For his name and free SureMilk folder, write Dairy Department, the Larro Feed Division . . .

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Minneapolis 1, Minnesota

SM-3-6

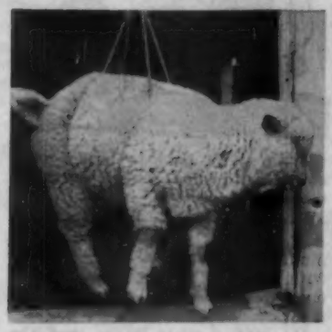
Get set for fall calving

This year, try Larro's safe, sure, money-saving way to raise better calves. Feed Larro SureRaise pre-starter for 25 days after 4 days of colostrum feeding. Work Larro SureCalf into the feeding program on a free-choice basis beginning the 5th day after calving.

This new method grows calves 26% faster than accepted standards, because it gives calves all the advantages of advanced nutritional benefits and today's most effective scours-fighters. Early rumen development helps calves digest low-cost roughage earlier to cut overall feed costs. Get complete details and a supply of SureRaise and SureCalf from your Larro SureFeed dealer.

HANDY HINTS

WEIGH YOUR LAMB WITH NO FUSS



Gus Jereszewski, Texas, has an easy way of weighing his lambs to see if they are getting large enough to market. When weighed as shown in the picture, they do not struggle at all; and the method is simple and quick.

Just make a figure eight out of your rope. Put one of the loops behind the lamb's front legs and around its body, and the other loop around its body in front of its back legs. Then hang on scales.

Texas F. B. CURRY

MILK CAN CARRIER

We converted an old wheelbarrow into a can carrier by removing the tray which was rusted and no longer useful. A steel support was bolted into the legs as shown.

This has served us for many years in carrying milk cans as well as cans of water for chickens on the range.

Minnesota ANN ZAWISTOWSKI

SANDER TRIMS HOOFS

The herdsman at the University of Illinois has found a simple way to trim cows' hoofs. It is a quarter-inch electric drill equipped with a sanding attachment.

Illinois C. F. MARLEY

WASHES CEILING WITH SPONGE

For an easy way to clean the ceiling of your milking parlor, attach a sponge to the end of a mop handle. Close the spring on the sponge; dip it in hot suds, and rub it along the ceiling over the soiled places. Rinse the sponge in clear water and go over ceiling again.

We also find it more economical to paint the interior with a rubber base paint. It is easier to keep clean and it does not wash off.

Missouri MRS. JOHN R. BALLAH

FLUSHES VACUUM LINES

Dairyman Austin Sullivan, Essex County, Mass., gets better efficiency while milking by flushing out the vacuum lines twice a year. He uses 1 can of lye in a 12-quart pail of warm water to loosen the sediment from the far petcock to the tank on the compressor where he drains it through the petcock. After rinsing it out with 2 pails of water, he reverses the motor, forcing clean water from the tank, and blows out each petcock individually, catching the water in a pail. It doesn't take more than half an hour for the entire job.

New Hampshire CHARLES L. STRATTON

HOMEMADE POST MALL

Make yourself a good mall for driving fence posts. Take a piston from a large motor and weld a ¾-inch pipe, 3 feet long, to the hole where the wrist pin was connected.

Maine EMERY TARDIFF, JR.

TRACTOR FRIZNOLE

An old 4-horse dirt friznole was used, fastened with four bolts to the digger arms of a field tiller. The front draw rods are wrapped around draw pins. This three-point hitch can be made to fit your hydraulic lift on rear of tractor.

Utah DON R. CHRISTENSEN

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ALL STAINLESS STEEL

BULK COOLERS

give you the most for your farm tank dollar!

Mojonnier was:

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...to design a cold wall tank exclusively for farm use (1944).

...to strain warm milk from the second milking directly into cold milk from previous milking. Proven practical at University of Idaho, Moscow, Idaho (1947).

...to install a bulk route 100% equipped with cold wall tanks. Edisto Farms Dairy, Columbia, S. C. (1949-1950).

...to install a 100% skip-day pick-up route. Swaner Farms Dairy, Iowa City, Ia. (1951).

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"firsts" mean **experience**, and you get the full benefit of this pioneering manufacturing experience through the many, important Mojonnier Bulk Cooler features—features not found in any other tank!

Responsibility. 40 years of producing the finest in refrigerated and other processing equipment for the Dairy Industry has earned Mojonnier a reputation second to none for service and product dependability . . . that's why dairymen expect complete satisfaction and trouble-free operation from Mojonnier Standard or Vacuum Bulk Coolers for years to come.

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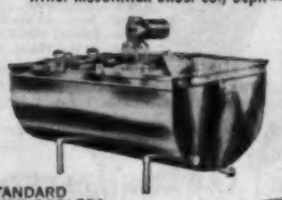

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PIONEER BUILDERS OF STAINLESS STEEL DAIRY COOLING EQUIPMENT

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You can't build up a dairy herd on guesses. You need records—ACCURATE RECORDS. Thousands of good dairy farmers say ours are the most convenient milk record sheets they can find anywhere. Here is the price list. Orders are shipped promptly.

Weekly Records—Two Milkings	Price of a Year's Supply	Monthly Records—Two Milkings	Price of a Year's Supply
10 cows, one week	$2.50	1 cow, one month	$1.00
20 cows, one week	3.00	10 cows, one month	1.25
30 cows, one week	3.50	25 cows, one month	1.75
		35 cows, one month	2.00

For Three Milkings a Day	Price of a Year's Supply
15 Cows, one month	$1.50

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light, insulation, low upkeep

with

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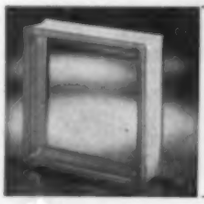
Any farm building, new or old, of frame, brick or concrete block construction, can have the outstanding benefits of glass block panels.

IMPORTANT ADVANTAGES

Owens-Illinois Glass Block are tough and hard to break . . . won't rust, rot or corrode . . . never need puttying or painting . . . insulate like an 8" brick wall . . . easy to clean with an occasional hosing.



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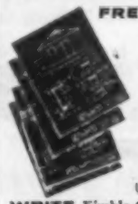
See your Owens-Illinois Glass Block dealer now. He'll show you how glass block can give your buildings better light, better insulation, low maintenance.



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LOOK FOR **warfarin** ON THE LABEL . . . WORLD'S GREATEST RAT AND MOUSE KILLER

A Vest Pocket Herd Book Is a Good Investment

Which milker are you?

(Continued from page 899)

begin to forget about him and relax.

While I have never caught any of the cows actually sleeping under these circumstances, I have seen them look rather exhausted. (Melvin Scholl, please note!)

In the morning the tester wakes up with the sun shining in his eyes. Birds are singing; a calf bawls. Rattleheaded hens exclaim in perpetual amazement at their ability to lay eggs. The house is quiet. Tester considers his good fortune in being here this morning and goes back to sleep.

When next he wakes the sun isn't in his eyes any more; it is shining on the north wall. For the first time he has a feeling of concern. Things are awfully quiet. Could some strange malady strike a family during the night, wiping it out? Did they move away while he was asleep? No, that's silly; they must be here some place.

Just when the tester has about decided to call the sheriff, or coroner, or somebody, he hears people getting up. In his relief, he wishes he could go back to sleep.

Milking procedure in the morning is about the same as it was the evening before. By late afternoon the tester, reluctantly but rather hurriedly, tears himself away in order to get to the next place in time for milking.

It has been a pleasure testing here and he wishes "D. A.'s" cows were more profitable. If it's not one thing with "D. A.," it's another. Bad luck just seems to park on his doorstep. However, one must admit, some people who get more milk from their cows have a lot less fun.

Strips, strips, strips . . .

Another type of milker I like, although he isn't as sociable as "D. A.," is the "thorough" one. The only time he strips his cows is when the tester comes.

You know this because little Johnny is hepped up about going some place this evening but, because of the tester, milking is going to take a lot longer than usual. Johnny does not like it and he says so.

Daddy strips, and strips, and strips, and strips until one would think a cow giving any milk at all would make it faster than he is taking it out.

These cows test pretty good but it seems they should milk better than they do.

One more method I would like to mention is a sort of composite of these systems we have discussed. When the tester is at his place, he scatters all the cans and buckets he can find up and down the barn.

His son and a hired man come in and milk all over the barn with four, or more, units. "Composite" himself feeds cows and pigs, or does other chores until 10 or 15 cows have been milked.

By the time the milker operators are about out of places to put milk, and the tester has chewed up his fingernails, "Composite" comes in with a small pail to strip. He, like "daddy," strips and strips. He doesn't get any milk, to speak of, but he is persistent.

If the tester complains that he cannot keep all machines under observation, as he is required to do according to rules, this dairyman is likely to reply that anyone with eyes in his head and sense enough to use them could see all right.

"If we didn't have to bother with cows, we could enjoy ourselves more . . . "

He may further imply that the tester should wise up and realize how lucky he is to have this job at all. Unless he wishes to engage in open warfare, the tester retires in confusion or otherwise, depending on his personal make-up.

"Composite" may raise good crops; his hogs may be fat and his cows in good shape. He'll probably quit milking cows one of these days. There is more money in other things.

My favorite . . .

Of all dairymen, "Steady Freddie" is my favorite. Most dairymen are "Steady Freddies," and all good ones are. Some strip after the machine and some do not but, however they do it, it is done quickly and promptly with a rhythm that almost matches the pulsation of well-regulated milking machines.

Unless there is a radio going in the barn, all you hear is pulsators and the occasional rattle of a milk pail.

Susie, Cutie, Samantha, and Hildegarde always stand in the same stall and in line, and they are milked that way. If Samantha is dry, she still stands in her own stall and "Freddie" simply skips her when he milks.

Let us assume that this "Freddie" strips his cows. At exactly five minutes to five Susie hears the milking machine start. She knows someone is in the milk room rinsing out milker buckets. Often there is a big clock on the barn wall but she doesn't need to look at it; she knows what time it is.

In about four minutes someone will arrive with a pail of warm water and a strip cup. He does.

Cutie is next. She is so sure of it that, sometimes, she lets down her milk just before the man with the pail of water can get there. Samantha and Hildegarde are just as sure of their places in "milk-line" protocol. Widget and Trinket, on the other side of the barn, can gamble a bucket of beet pulp that they will receive similar favors at about 14 and 11 minutes to 6.

Petunia, the heifer who is a little giddy yet, may cause trouble. But "Freddie" has ingenious ways and a charming manner with heifers. They hardly ever cause trouble.

He even has a way with strainer pads. You never hear him banging away on the things. He changes them quite often but when you examine them, it hardly seemed necessary to change.

"Freddie" uses two units only. He doesn't think a man can run

more than two units in a stanchion barn and do it properly. He may have the hired man do the machine work. It is his job to wash, use the strip cup, return to a machine that is working and machine-strip for about a half minute, remove the milker, dump the milk in "Freddie's" pail, and put the milker on the next cow.

"Freddie" is always there when the machine comes off and he sits down immediately to strip. He gets only a token amount of milk.

"But," he says, "I like to get my hands on every cow at milking time. Sore teats, injuries, or any udder trouble comes to my attention that way. I also like to know how much milk each cow gives each time."

He and the hired man maintain a sort of competition, too. The hired man doesn't like to keep "Freddie" waiting to strip a cow; he gets restless standing around. And "Freddie" wants to be on hand when the machine comes off so the hired man won't think he is a lazy or lax boss.

The presence of a tester doesn't make much difference, either. Weighing and sampling takes but a few seconds and the tester soon falls into the rhythm of the operation. "Freddie" may invent little devices to make up these few seconds that are lost during testing. At any rate, milking is always on time.

Another "Freddie" may not strip his cows but he seldom uses more than two units. If he carries milk, he will have to move a little faster than the other "Freddie's" hired man, even with two units, but he has the same rhythm and punctuality in getting to the first and last cows.

Most great cows have their "Freddies."

I have timed "Steady Freddies" in many herds and most of them can milk 30 cows in from an hour to an hour and 10 minutes. Other elements of their business are remarkably free of fluctuation.

When bulk tanks are used, the tank readings for 30 days seldom vary as much as 0.03 of 1 per cent from the tester's calculated 30-day production, unless there are too many cows coming fresh or going dry during the month.

Tests will not vary more than 0.1 of 1 per cent, as a rule, from the milk plant test. If they do vary more than that, a suitable explanation generally can be found.

Each cow's test is pretty steady from month to month and, in case of Advanced Registry testing, from milking to milking.

"Freddie" is a dream; he is hep and in the groove. I wish there were more of him. **THE END**

How to correct cistern problems

Cisterns should be pumped dry and thoroughly cleaned at least once each year.

by Ted L. Willrich

STALE or strong odor and dirty water are the common complaints about cistern water. Most trouble occurs during late summer when rainfall is less frequent and the water level in the cistern drops.

Water becomes stale when oxygen is taken from the water. Decomposing organic matter which gets into the cistern uses oxygen. Frequently, strong odors develop. These odors can be removed by suspending a small cloth sack filled with charcoal into the water. The charcoal absorbs odors from the water. In time it will lose its effectiveness so must be changed occasionally.

Aeration of the water will remove odors, also. A simple method of aeration is to pump water from the cistern and let it return to the cistern by falling through the air. If the water falls as a spray from a hose nozzle, more oxygen is mixed with the water.

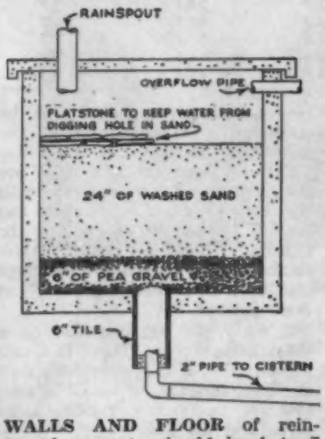
The best way to eliminate odor problems is to keep all foreign material out of the cistern. Several practices can be used to keep dirt, insects, leaves, or other organic material from entering the cistern. First, let the roof wash off before the water is turned into the cistern. This keeps out much of the dust, soot, bird droppings, and other pollution that may be on the roof.

All water going into the cistern should filter through a bed of sand. The sand filter will strain undesirable material from the water. Recommended depth of washed filter sand is 2 feet. A minimum sand surface area of 12 square feet is suggested. A 3x4-foot rectangular box filter or a 48-inch diameter culvert pipe would be satisfactory.

Finally, the cistern must be tight to exclude insects, rodents, roots, and foul seepage. A loose-fitting cover or cracked wall will let all kinds of contaminating agents enter the cistern. Large cracks can be repaired individually. Numerous small cracks can be repaired most satisfactorily by applying a rich cement and sand mortar to the entire wall surface.

Even well-managed cisterns will collect some undesirable material. The cistern should be pumped dry and thoroughly cleaned at least once each year. But don't be fooled by clean cistern water. It's not safe to drink unless it is chemically treated with chlorine.

The author is an extension agricultural engineer, Iowa State College.



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ARTIFICIAL BREEDING

A.I. daughters classify well

Canadians have classified 11,562 Holsteins resulting from artificial insemination. Type comparable to natural daughters. Rank high on fore udders.

by H. A. Herman

THE daughters of bulls used in artificial insemination and the daughters of sires used privately compare on rather even terms in the type classification program of the Canadian Holstein-Friesian Association.

In March 1953, the type classification program of the Canadian association was changed so that cows would be classified for type on a detailed score-card breakdown. Since then 37,171 cows, of which 11,562 were sired by bulls in Canadian artificial insemination units, have been classified.

Comparison favorable . . .

Of the cows rated "Good Plus and Better" on over-all type, 48.2 per cent were by sires used in A. I. as compared to 47.8 per cent for the privately-owned sires. This difference is not sufficient to create excitement, but the fact remains that A. I. is doing as good a job as the privately-owned sires for the Canadian breeders. We have envied the fine cooperation between the key Holstein breeders and the A. I. program in Canada. Many of the most valued sires are leased to A. I. associations.

It is readily admitted by many students of dairy cattle type that the three most difficult points to improve through breeding are: **feet and legs, shoulders,** and **fore udder.** The table shows the comparison of A. I. and naturally-sired progeny on a classification breakdown as reported in Canada.

On the other hand, the privately-owned sires produced daughters excelling the A. I. daughters by 2.5 per cent in general appearance, 2.1 per cent in rear udder, 3.7 per cent in feet and legs, and 3.1 per cent in rump.

Results encouraging . . .

Admittedly the difference between the daughters of A. I. sires and privately-owned sires in Canada is not great. It is encouraging to know, however, in a province noted for its fine Holsteins, as Ontario is, that the sires used in the artificial insemination program are doing as good a job, if not slightly better in some respects, as the sires used in natural service.

Both improvement in type and production are a bit elusive at times. We correct one particular point such as "fore udder" by breeding and find we are falling short somewhere else such as "feet and legs". As the old southerner put it: "Son, it's pretty hard to get all the coons up one tree."

The classification program sponsored by the artificial insemination units in Ontario and the Canadian Holstein-Friesian Association has the same objectives as type classification in America.

How plan operates . . .

Nearly 10 years ago a "type program" was installed by the Ontario Association of Artificial Breeders and the Canadian Holstein-Friesian Association. The program has been changed to meet the needs but kept on a practical, low cost basis. Pertinent features are:

1. Cows resulting from A. I. are inspected by official inspector with the breeder paying 50 cents and the A. I. unit 50 cents into the Canadian Holstein-Friesian Association treasury. Non-unit members who have A. I. offspring pay $1 as their part of fee.

2. All cattle are classified on a breakdown system. There is a rating on general characteristics such as large, medium, or small in size; low set, upstanding, stylish, lacks style, and too fine.

The score card is broken down to give ratings on general appear-

Cows classified "Good+ or Better"

	Cows by A. I. sires	Cows by privately-owned sires	Difference in favor of A. I. sires
	per cent	per cent	per cent
Good+ or better	48.2	47.8	+0.4
General appearance	49.9	52.4	−2.5
Dairy character	83.9	82.8	+1.1
Body capacity	79.6	77.0	+2.6
Mammary system	51.9	50.2	+1.7
Fore udder	54.2	48.2	+5.7
Rear udder	53.6	55.7	−2.1
Feet and legs	42.8	46.5	−3.7
Rump	42.7	45.8	−3.1

As would be expected, more variation exists between the two groups when various subsections of the score card are considered. The greatest difference comes in favor of improvement of the fore udder where the A. I. sires excelled the privately-owned sires by a difference of 5.7 per cent.

Likewise, the daughters of sires used in A. I. exceeded those of privately-owned sires in over-all mammary system by 1.7 per cent, in body capacity 2.6 per cent, and dairy character 1.1 per cent.

The figures quoted in this article are from a study made by D. G. Grieve and J. C. Rennie, Ontario Agricultural College, with support from the National Association of Artificial Breeders.

ance, dairy character, body capacity, and mammary system. Ratings are given on fore and rear udder in addition to over-all mammary system. Legs and feet and rump complete the major breakdowns.

3. Defective characteristics are reported on practically every part of conformation by means of a "tick system". A defect to a minor degree gets one check (✓), a pronounced degree two checks (✓✓) etc. There are seven types of defects checked on "head, neck, and shoulders"; nine on "body"; six on "rump"; ten on "feet and legs"; seventeen on "udder and teats"; seven or more on "abnormalities."

The result of a "tick system" such as this is a very clear picture of the strong and weak points of an animal.

4. All scores are based on "breed averages" and the percentage of animals "Good+ or Better". For example, on "general appearance" 51 per cent of the cows are above "Good+". Thus an artificial insemination unit can quickly determine, after classification scores are available, whether a given sire is improving or lowering type of his progeny — and just where he is transmitting weak or strong characteristics.

5. The data collected are tallied on IBM equipment and sent regularly to each artificial insemination unit. It is a live and continuous program. The classification report forms from the Canadian Holstein-Friesian Association are eagerly awaited and studied carefully by those in charge of sire selection for each bull stud.

The important feature of this program is that nearly one-third of the animals inspected are A. I. offspring and their merits and shortcomings are made known for planning the future course of action in sire selection.

Program in America . . .

Artificial insemination associations in the United States have the opportunity for a similar program. The Holstein-Friesian Association of America several years ago devised a plan to make official inspectors available to bull studs at cost. Random daughters, selected by the breed association, are inspected (usually 50 or more) for a given sire in A. I. Many breeding associations have taken advantage of this service, but it has not reached the proportions found in Canada.

The American Guernsey Cattle Club has developed a similar plan, and the American Jersey Cattle Club has a plan in the hopper that may permit A. I. progeny of sires to be inspected on a scheme similar to "group classification".

We feel more A. I. associations and more breeders who have A. I. progeny should take advantage of these plans.

6,000 at New York's annual cattle show

Increased interest in artificial breeding throughout New York State and western Vermont was reflected in attendance and competition for over $5,000 in cash prizes at the sixth annual cattle show staged by New York Artificial Breeders' Cooperative at Ithaca, N. Y., August 3 and 4. The two-day show attracted 6,000 spectators and 432 entries in the 50 classes of the five chief dairy breeds.

Huge tents with a spread of canvas easily rivalling Ringling Brothers in the hey day of the circus furnished a colorful setting for the show on the spacious acres of the big cooperative's headquarters. The judging, done in two sawdust covered rings of the main tent, held attention of a capacity audience for more than seven hours.

At the formal business session this year, J. Stanley Earl, widely known head of the National Association of Artificial Breeders, was re-elected president of the New York cooperative.

Participating in the session were 195 elected delegates from local dairy cattle breeding units throughout New York State and western Vermont. The delegates, representing 47,000 members, voted to raise the budget for the 1956-57 year to provide for first-service artificial breeding for 420,000 cows as against the previous year's total of 393,308.

Michigan Ayrshire sets milk record

Proud Ruler's Maida, 4-year-old registered Ayrshire owned by Marvin Ludwig and Sons, Lake Orion, Mich., has established a new all-breed milk record for 4-year-old cows. In 305 days on 2x, she produced 23,485 pounds of milk, 918 pounds of butterfat. Bred by J. R. Leece, Hortonville, Mich., she is sired by Ayr-Lock Proud Ruler, now in service at Michigan Artificial Breeders' Cooperative, Inc. Her dam is Leehaven Continuation's Maida, Approved.

The new class leader's tremendous milk record was made under ordinary circumstances. She was machine milked and did not receive any more pampering than the rest of the 40-cow milking herd. "Maida's" total production for her first three lactations is more than 53,000 pounds of milk.

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What about cornstalks for bedding?

(Continued from page 901)

are noted, however, or if moisture can be seen when the lower section of the stalk is broken in the hands, then some method of harvest which will promote drying probably should be used.

If drying equipment is available, it would be possible to dry the stalks artificially. It is doubtful that this would be economically feasible as artificial drying will not add much to the quality of the bedding as compared to natural drying, but will cost more.

It would seem desirable to harvest the ear corn and stalks separately so that we can allow extra time for the stalks to dry. This also makes it possible to use machinery already on many farms. The stalks can be mowed, raked with a side delivery rake, and picked up with a forage harvester or pick-up baler. If the stalks are dry, these operations can be done in rapid succession. If the stalks are not dry, then some time should be allowed between the mowing and raking operations.

In the case of wet stalks, drying can be considerably promoted if a shredder is used, rather than the mower. Some types of shredders do not detach all the cornstalk from the root system. If you use a shredder of this type and want a clean field, it may be necessary to mow prior to shredding. The mower and rake will usually handle the stalks in a satisfactory manner, but because of the ridged condition frequently found in corn fields, some extra care in operation may be necessary to prevent unnecessary damage to the equipment being used.

There may be many long pieces in the bales if the stalks are harvested with the pickup baler. These will probably give some trouble where manure is handled with a gutter cleaner, but usually are acceptable for loose housing if the manure is handled with a tractor-mounted manure loader. If the stover is needed for use where the bedding will be handled with a gutter cleaner, it should be shredded prior to baling. Chopped stover can be expected to move through a gutter cleaner about as well as straw does.

A convenient method of harvesting cornstalks is to use one of the rotary forage harvesters. These machines were developed from stalk shredders and will shred and load the stalks. It should be possible to shred and load the stalks directly if the stalks are dry at the time of harvest. If the material is too wet for storage, it may be blown back on the field with the rotary harvester and allowed to dry. After drying, the rotary harvester can be used to pick up the stover.

Some manufacturers now make pickers which will chop the stalk as the corn is picked and blow the stover into a wagon. This method will reduce to a minimum the labor needed to harvest the stalks, but in many cases the stalks will be much too wet to store. Extra precautions in storage should be taken or the material artificially dried if this method is used. It would be well to check the stored material regularly the first few weeks to see that it is not heating.

Following is a summary of the methods which can be used to harvest wet stalks:

1. Mow, allow to dry, rake, bale or chop.
2. Shred, allow to dry, rake, bale or chop.
3. Rotary harvester, blow on field, pick up with rotary harvester.
4. Bind, shock, shred with stationary shredder.

Here is how to harvest dry stalks.

1. Mow, rake, bale or chop.
2. Shred, rake, bale or chop.
3. Rotary harvester.
4. Picker-chopper.

Storing corn stover will not usually present much of a problem. Some farmers report that they let the stalks stand and then harvest in small lots during the winter as needed. The success of such a system will depend on the condition of the fields in winter. In many dairy areas, it would be necessary to harvest the stalks in the fall. The following table gives some information on relative space requirements for storage of various types of bedding.

Bedding storage space requirements

Material	Cubic feet per ton
Baled straw	200-330
Loose straw	450-570
Chopped straw	250-350
Shavings	100
Baled cornstalks (est.)	300-350
Chopped cornstalks (est.)	300-450

Dry, chopped, or shredded stover can be stored as any other loose bedding material. It would be desirable to cover the pile if it must be stored outside, but this is not absolutely necessary. Baled corn stover is easily handled as the bales usually weigh less than 35 pounds. They are firm and stack well. Again, if stored outside, a cover would be desirable but not necessary.

In addition to the principal benefit of a ready supply of bedding, we gain some benefit in better corn borer control and easier plowing. Most of our dairy farms have enough equipment to harvest cornstalks by one or more of the methods mentioned, and many do grow some ear corn. More dairy farmers could well try salvaging cornstalks for bedding.

THE END

Did you know that burlap . . .

. . . over a water barrel lessens slop-over?

. . . rags make good mop fillers for dirty clean-up jobs like hen house floors?

. . . is excellent for shipping pelts?

. . . hung under a dripping pipe or dipped into a barrel of water will keep atmosphere moist and cool? (for eggs, apples, etc.)

. . . makes cozy bed for dogs, cats, milk goats, etc.?

. . . makes excellent punk to smoke bees? (wrap ball tightly)

. . . slipped over tractor seat or stuffed with straw as cushion makes seat warmer in winter and cooler in summer?

. . . makes an emergency rain cape? (open one side and one end)

. . . filled with egg sanitizer dissolves the detergent through the bag in an automatic egg washer?

. . . makes good apron for greasy or other dirty jobs? (good grease rags, too)

. . . hung over entrance of dog house in winter keeps dog warm?

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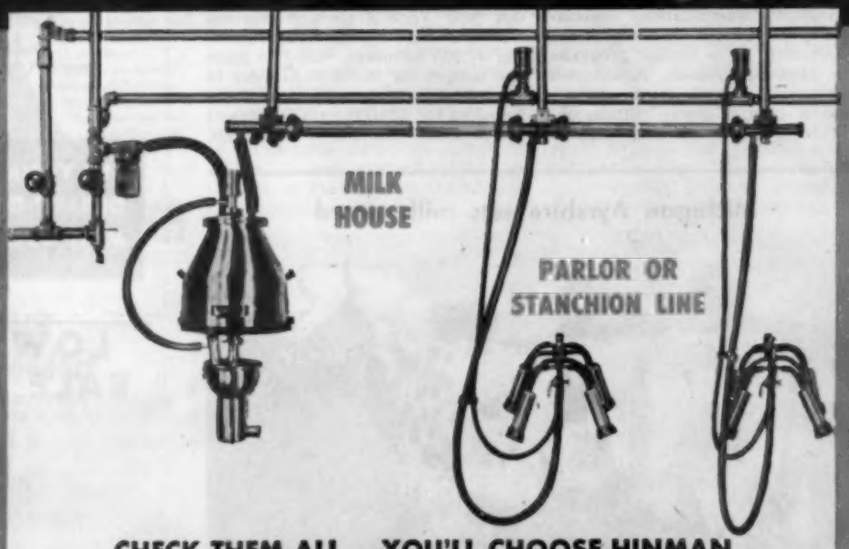
o MAIL COUPON TODAY with information including barn layout and herd count. You'll be amazed at the low cost.



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Some facts about the farm situation

by I. F. Hall

THE farm population has grown smaller and smaller over the years, both in numbers and in relation to the total United States population. In 1910 farm people made up more than one-third of the United States population. In 1955 the farm population was only 13 per cent or a little over one-tenth of the total.

We have changed during these years from an agricultural to an industrial economy. For example, farm products accounted for 31 per cent of the United States production in 1933. Even though this was at the bottom of the depression, the farm share was only a little higher than it was during a few years earlier. By 1953, only 20 years later, the total value of farm products was only 6 per cent of the national production.

A large portion of the United States farms provide the main support for the farm family; others are mainly residences for city workers or for retired persons. There are a large number which may be the main support of the family, but are too small or unproductive as to offer little prospect for a satisfactory living even under the best management.

As shown in the table, farms in Class V and VI with gross sales of less than $2,500 have decreased nearly 400,000 since 1950. Farms in Class I account for one-fourth of the farm sales but represent only 4 per cent of the commercial farms.

The medium and large commercial family farms, Class II, III, and IV, comprise nearly three-fifths of all the commercial farms.

Farms by economic class, United States, 1949 and 1954

Economic classification	Value of sales class limits	Number		Percentage	
		1949	1954	1949	1954
		Thousands	Thousands	Per cent	Per cent
All farms		5,379	4,782	100.0	100.0
Commercial farms	$250 and over[1]	3,706	3,327	68.9	69.6
Class I	$25,000 and over	103	134	1.9	2.8
Class II	$10,000-$24,999	381	449	7.1	9.4
Class III	$5,000-$9,999	721	707	13.4	14.8
Class IV	$2,500-$4,999	882	811	16.4	16.9
Class V	$1,200-$2,499	901	763	16.8	16.0
Class VI	$250-$1,199[1]	717	462	13.3	9.7
Other farms		1,673	1,456	31.1	30.4
Part-time	$250-$1,199[1]	639	575	11.9	12.0
Residential	Under $250	1,029	879	19.1	18.3
Abnormal	(2)	4	3	.1	.1

1. Farms with sales of $250 to $1,199 were classified as part-time if the operator worked off-farm as much as 100 days or other income of the operator family exceeded farm sales.
2. Public and private institutional farms, experiment stations, etc.

The United States Bureau of The Census lists property as a farm if it is 3 acres or more of land and has a gross sale of $150 or more during the year. If one were to include only those farms with gross sales of $2,500 or more for the year 1954, there would be only 2.1 million farms, or 44 per cent of the 4.8 million total farms. These 44 per cent produce 60 per cent of all agricultural output.

No matter what the government farm program may be, the other 2.7 million farmers can look for little increase in farm income.

The part-time and residential farms decreased during the 5-year period but still account for nearly one-third of all farms. In 1954 28 per cent of all farm operators worked 100 days or more off the farm.

Today a farmer has to have a business large enough to justify the capital investment required by modern farming methods. This does not mean that we are moving away from the family-sized farm. It simply means that the family-sized farm is growing larger along with the economy of the nation.

Are you a safe driver?

Can you answer "yes" to the following?

- Do you always observe and obey highway signs and markers?
- Do you always use the proper signals for turns and stops?
- Do you always slow down, look and listen before crossing railroad tracks?
- Is there good two-way vision where your own driveway enters the highway?
- When forced to stop, do you pull completely off the traveled portion of the road, or at least to the safest spot available?
- Do you always stay at least one car length for each 10 miles per hour behind another vehicle that you do not intend to pass?
- Do you always have a light, front and rear, on any vehicle you drive on a road at night?
- Do you keep your arms inside when driving or riding in a truck or other vehicle?
- Do you have your vehicles checked periodically to keep them in good condition for safe driving?
- Do you go down steep or slippery grades in low gear?
- Do you avoid passing another vehicle near the top of hills, on curves, or any other place where vision is obstructed?
- Do you always make sure that no one is in the way when you reverse?
- When walking on a road do you always face traffic, in other words, keep to the left?
- When walking on a road at night, do you always carry a light or wear something white?

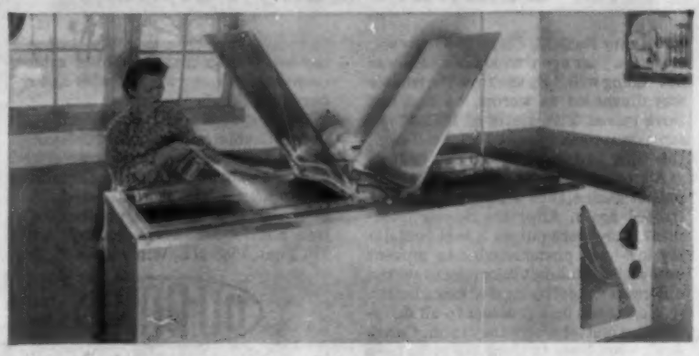
What Larson Brothers looked for (and got) in their new "Icy Kold"

Clarence Larson of Larson Bros.' farm, R. R. 1, Ringwood, Ill., has this to say about their new ice-bank type Cherry-Burrell farm tank:

"She's a fast cooler. Sidewall cooling gets milk down to 40° in a few seconds. Strainer bowl sits nice and tight so it's easy to rest pail on and pour into.

"Control system is simple. My 7-year-old nephew could set it—if I'd let him. We're getting lower counts—spending a lot less time in the milk house.

"Our hauler likes the way it drains."



Ethel Larson likes the "Icy Kold" because it's so easy to "spray" clean and "fog" sanitize with the built-in Cherry-Burrell sprayer.

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☐ Please send me the name of my nearest Cherry-Burrell dealer

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Monthly Records Two Milkings	Price of a Year's Supply	Weekly Records Two Milkings	Price of a Year's Supply
10 cows, one month	$1.25	10 cows, one week	$2.50
25 cows, one month	1.75	20 cows, one week	3.00
35 cows, one month	2.00	30 cows, one week	3.50
For Three Milkings a Day		Price of a Year's Supply	
15 cows, one month			$1.50

All prices include postage paid. Your check perfectly acceptable.

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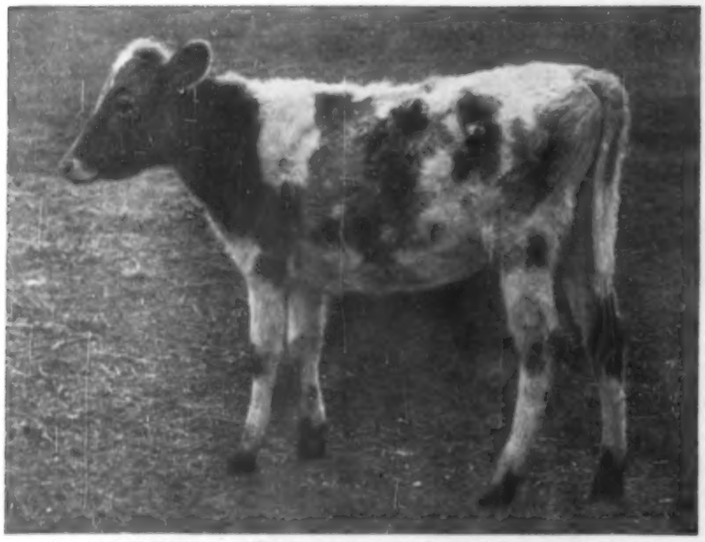

This dairy calf has worms. That's easy to see by the rough hair coat and general run-down appearance.

How Worm Control Is Paying Off for Delaware Dairy Farmer!

Mr. Henry Kozicki, Clayton, Delaware, noticed a year ago that his calf crop was not "doing well." By the time the trouble was diagnosed as worms, he had lost three calves. The winter of 1955-56 the same symptoms appeared in his calf crop; this time he knew what to do about it.

All calves got therapeutic doses of phenothiazine, then in 21 days they were treated again. After the second treatment, they were put on a feed containing low-level phenothiazine to prevent reinfection. It didn't take long to see the difference; all calves started doing better.

Worms can be a problem to all dairymen, no matter where they farm. Calves don't even have to show the symptoms of worms to be infected; worms can be there just the same. In most cases it's the few worms that hold back calves, resulting in slower weight gains and reduced feed efficiency.

Worm control with phenothiazine can be profitable and easy for dairymen everywhere. Many manufacturers of feed and minerals offer products containing phenothiazine for worm control. Ask your supplier for these products. For free booklet on worm control, write Du Pont, 2533-NE, Wilmington 98, Del.

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If Your Dealer Does Not Handle Goods Advertised in Hoard's Dairyman . . . . . Ask Him Why!

"Visitors Are Amazed At Our CHORE-BOY Milking System!"

writes J. E. Weller, Hodgenville, Kentucky

My brother and I have been using a Chore-Boy Pipe Line Milker at our Hillcrest Dairy to milk our herd of 45 high producing cows since November 2, 1955. We also have a bulk tank and we are certain this is a wonderful way to handle cows and produce clean milk.

We can milk in one hour. The pipeline is easy to keep clean and we think this is the only way to do this job. Many people have been here to see this system of milking and they are amazed when they see it in operation.

Only Chore-Boy has the money-saving, uniform-milking Master Pulsator and the simple, trouble-free Kleen-Flo Milk Releaser and Pipeline Washer. These developments combined with gentle, low-vacuum milking make Chore-Boy the best milking system for you and your cows.

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• LONG AND SHORT TUBE MILKERS • STALLS
• DAIRY BARN EQUIPMENT

Write Dept. 29 for FREE Dairy Barn Plan Kit.

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FARMER FEEDER CO., INC., CAMBRIDGE CITY, IND.

* ONLY CHORE-BOY GIVES YOU THESE NEW FEATURES

• MASTER PULSATOR
Only 1 Pulsator Handles up to 6 Milker Units. Assures uniform milking to all cows in herd. Increases Milk Production.

• MILK RELEASER AND PIPELINE WASHER
Low-cost, simple, trouble-free. Washes pipeline in place, faster and cleaner.

*How patented or pending

Foot rot is main foot disorder

Keeping cows' feet trimmed, filling in barnyard mudholes, and providing lime boxes for cows to walk through are the best preventive measures.

by E. A. Woelffer, D.V.M.

ONE of our readers recently asked us to write an article on foot disorders in cattle, particularly foot rot. Right now farmers in my area are experiencing a considerable amount of foot trouble in their herds so it is a good time to discuss the subject.

Foot disorders, however, can occur almost any time of the year, and in any kind of weather. When barnyards and pastures are muddy and stony, foot rot is common. In dry seasons, wet areas like those around the watering tank are ready sources of infection. On the other hand, foot rot sometimes develops when conditions are about as ideal as they can be. It is sometimes difficult to figure out just what initiates some cases of foot rot.

Causes . . .

Many kinds of germs are present in soil, manure, and water. If there are tiny cuts or breaks in the skin or soft parts of the foot, germs have easy access to the underlying tissue. If conditions are right, inflammation develops.

Pus-forming bacteria, colon bacilli, spirochetes, and other microorganisms frequently gain entrance to susceptible tissue. A germ that destroys the tissue it affects and which is often considered to be the chief trouble maker in foot rot is known as *bacillus necrophorus*.

Foot injuries can occur in many different ways. Regardless of the cause, if there is pain there is lameness, although lameness may be present without pain. Swelling may take place in the presence or absence of infection.

Objects such as nails, wires, stones, glass, etc. often penetrate the horny tissues of the sole and work into the soft tissues causing severe lameness. Such injuries are often mistaken for foot rot.

Poor foot and leg conformation often predisposes to foot injury. A form of pressure necrosis occurs when the wall of the claw turns under. The undue pressure causes impaired circulation and death of the subscribed area.

Cows that receive very little exercise have less opportunity to keep their feet down to normal size and shape. Long claws tend to develop when the leg and particularly the fetlock are weak or too horizontal.

Abnormal joint structure induces excessive strain on the tendons and tissues on the back side of the leg and unevenly distributes the weight on the foot. Too much weight is thrown on the soft tissue of the heel. The injury that results predisposes to infection.

Occasionally a horny growth grows out from between the toes from excessive irritation. The condition is most commonly found in beef cattle, particularly bulls. It is, however, frequently seen in dairy cattle. Lameness and irritation usually result from its presence. Often the growth becomes infected.

While most lamenesses occur as a result of injuries in the foot, the cause may be in the joints or adjacent tissues, muscles or nerves, or blood vessels in other parts of the leg.

To recognize foot rot . . .

Lameness is usually the first symptom. This may be followed by a reddening and swelling of the skin at the hair line between the toes or at the bulb of the heel. In the more advanced cases, there may be an oozing of a watery fluid from the inflamed tissues. The sole and walls may become undermined by the infectious process.

Death of tissues is recognized in the accumulation of a grayish yellow exudate or discharge followed by a separation of the hoof from the underlying sensitive tissue.

A characteristic foul odor is usually present. Sometimes the infection penetrates so deep that it involves the joints, ligaments, and tendons.

When lameness occurs, the foot should always be suspected. However, other parts of the leg may be involved. Injured stifle joints are quite common in dairy cows. The condition usually develops from riding while in heat.

Lameness may also occur when joints of the leg or foot have arthritis or when muscles, ligaments, or tendons are bruised or sprained.

Can it be prevented?

Since tiny stones or coarse cinders in yards or lanes can cause small cuts or bruises to the feet, this type of surface is not desirable. Such small injuries are forerunners of foot rot.

Broken bottles, pieces of glass, nails, wire, etc. should be eliminated to minimize the chance of injury and subsequent infection. Try to keep cows out of muddy places. Fill in mudholes around the water trough with gravel and sand.

Some dairymen find it helpful to have cows walk through a shallow box of lime when entering or leaving the barn. About two to three inches of air-slaked lime should be kept in the box. The lime is more effective when five pounds of copper sulphate is added to each hundred pounds of lime. Replace or add more lime when necessary.

How to treat . . .

It is important to first examine the foot carefully. If it needs trimming, this should be done. Also, all dead or diseased tissues should be cut away. If it needs it, the foot should be cleaned with mild soap and water and then soaked or treated with a suitable antiseptic solution such as chlorine, creolin, formalin, or copper sulphate.

If the wound is quite severe and there is danger of continued injury and infection, bandage the foot.

When deep tissues are involved, veterinarians have to resort to systemic treatments which frequently include sulfa drugs or antibiotics. Sometimes the infection gets deep into one of the joints of the foot. When this occurs, surgery is usually necessary. Partial or complete amputation of the diseased claw is frequently the only way of saving the life of the animal.

Congress enacted these laws

In 1956, thousands of bills were considered by our representatives and senators. Of those enacted into law, these 28 are of particular interest to farmers.

by H. Willis Tobler

C.C.C. SALES — Basic and storable non-basic agricultural commodities may be sold without restriction where similar commodities are exported in raw or processed form. (Public Law 395).

WHEAT QUOTAS — Directs increase in marketing quotas and acreage allotments for 1956 crops for farms in counties of North Dakota, Minnesota, Montana, South Dakota, and California, capable of producing Durum wheat. (P.L. 431)

ST. LAWRENCE SEAWAY — Authorizes for controlling depths of not less than 27 feet in the improvement of the Great Lakes channels above Lake Erie. (P.L. 434)

MILK FOR CHILDREN — Extends special milk program for children to June 30, 1958 and increases funds to $75 million. Also makes program available to children in nonprofit nursery schools, child-care centers, summer camps, and so forth. Extends to December 31, 1958 disposal of dairy products to armed forces and veterans' hospitals. Extends to June 30, 1958 accelerated brucellosis eradication program and increases funds to $20 million per year. (P.L. 465)

GASOLINE TAX REFUND — Relieves farmers from federal taxes on gasoline and special fuels used on farm for farming purposes. (P.L. 466)

WATER CONSERVATION — Eliminates restriction of water conservation measures to only arid and semi-arid areas. Permits measures as agricultural conservation program practices in any state. (P.L. 483)

SOIL BANK — Authorizes payments for participation in acreage reserve and conservation reserve programs of Soil Bank. (P.L. 540)

U.S.D.A. APPROPRIATIONS — Appropriates $1,993,744,968 to run U. S. Department of Agriculture during fiscal year July 1, 1956 through June 30, 1957. (P.L. 554)

RURAL LIBRARIES — Authorizes $7½ million annually for five years for assistance to states for extension of public library services in rural areas. (P.L. 597)

HIGHWAY CONSTRUCTION — Authorizes 13-year construction program for 41,000 miles in interstate system and 3-year extension of regular highway systems, including secondary and farm-to-market roads. To be financed by increased gasoline taxes, and so forth. (P.L. 627)

DRIED MILK — Modifies the term "nonfat dry milk solids" by eliminating the word "solids." (P.L. 646)

MILK FOR CHILDREN—Clarifies authority to make certain that program available to noncharitable groups, such as Boy Scouts, 4-H Club camps, and others. (P.L. 752)

SOIL CONSERVATION—Extends to January 1, 1959 authority for agricultural conservation payments to farmers. (P.L. 756)

FARM CREDIT — Provides for retirement of government capital in federal intermediate credit banks and merges production credit corporations in such banks. (P.L. 809)

PERISHABLE COMMODITIES—Amends law in connection with practices in the marketing of perishable agricultural commodities. (P.L. 842)

FARM-CITY WEEK —The week of November 16 to 22, 1956 designated as National Farm-City Week. (P.L. 850)

C.C.C. BORROWING POWER—Sets limitation of $14½ billion to carry out price support operations. (P.L. 864)

FARM CREDIT—Provides additional funds for emergency loan programs, refinancing of existing farm debts, and assistance to part-time farmers. (P.L. 878)

SOCIAL SECURITY — Amends old age and survivors insurance program, including modification of alternative methods of reporting income by self-employed farmers. (P.L. 880)

FARM HOUSING — Extends to July 25, 1958 loan guaranty program for World War II veterans providing financial assistance for repairs, alterations, and so forth to farm houses and other farm buildings. (P.L. 898)

CUSTOMS SIMPLIFICATION—Amends certain administrative provisions of Tariff Act of 1930 and establishes new valuation procedures. (P.L. 927)

MIGRANT FARM WORKERS—Requires Interstate Commerce Commission to provide for the comfort and safety of seasonal farm workers transported by motor vehicles. (P.L. 939)

WHEAT AGREEMENT—Extends to July 31, 1959 the participation of U. S. in the International Wheat Agreement. (P.L. 945)

TRIP LEASING — Prohibits Interstate Commerce Commission from interfering with leasing of trucks to haul nonagricultural commodities on return trip after transporting farm products to market. (P.L. 957)

AGRICULTURAL TRADE DEVELOPMENT — Sets limitation of $3 billion for sale of surplus agricultural commodities to be paid for by foreign currencies. (P.L. 962)

WATERSHED PROTECTION — Broadens law to include all types of water conservation work so as to cover municipal and industrial phases, not just agricultural as previously authorized. (P.L. 1018)

FARM HOUSING — Extends to June 30, 1961 authority of Secretary of Agriculture to borrow funds to make loans for construction, repair, and so forth of farm dwellings and other farm buildings. (P.L. 1020)

GREAT PLAINS PROGRAM — Authorizes contracts up to 10 years with farmers in Great Plains states for conservation of soil and water resources. Federal share of costs to average about 80 per cent. (P.L. 1021)

The author is director of legislation for the National Milk Producers Federation.

LIFT OUT
the cooling system

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As thousands of dairy farmers have found, it is easy to see the advantages of a bulk milk cooler if you can *lift out* the cooling system. Look at what Wilson gives you because the condenser and coils *can* be lifted out:

BETTER, SAFER MILK COOLING. Because the cooling system operates in its own compartment, completely separate from milk reservoir, you get faster cooling, safer cooling. Milk can never freeze—ice is never in contact with milk reservoir. No chance for tank distortion—ice build-up can't affect calibration. You always get full measure in Wilson coolers.

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LOWER COSTS. Wilson's separate, removable cooling system cuts your costs. Initial wiring in many cases requires less work, less money than other types. Operation costs are low, too, because the high water-to-milk ratio, that Wilson's removable cooling system makes possible, means you get all the cooling you need with a smaller condenser. And service costs are obviously lower when you can get at the cooling system so easily.

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DAIRY FARM HOME

Refreshing pineapple

Here are some appetite-appealing uses for nutritious, delicious, refreshing pineapple.

by Marian Pike

PINEAPPLE doesn't grow on trees. It grows on field plants 3 to 4 feet high, and it takes 18 to 22 months, almost 2 years, to produce and ripen fruit. But it is certainly worth waiting for because it is such a refreshing delicacy and so nutritious.

The values of canned pineapple in the diet are many. Directors of mass feeding, as well as homemakers, find that frequent serving of pineapple sparks interest in meals. Hard-working individuals appreciate its quick energy. Reducers find it a help in their diets, making lean meals more interesting without adding too many calories.

As for specific nutrients, canned pineapple ranks high among canned and fresh fruits in its contributions of calcium and iron; it stands well up on the list in thiamine; and it supplies worthwhile amounts of ascorbic acid. A cup of pineapple juice equals 121 calories. A cup of crushed pineapple with syrup is 204 calories. Two medium or one large slice with two tablespoons syrup is 95 calories.

Pineapple is canned in both large and medium slices. The large are 3½ inches in diameter and almost ½-inch thick. A slice equals in weight 2 of the medium slices which are about 3 inches in diameter and ⅜-inch thick. A No. 2½ can contains 8 large slices; a No. 2 can, 10 medium slices.

Pineapple chunks are spoon-sized pieces; tidbits are smaller, daintier pieces. Crushed pineapple is packed in buffet or flat cans which hold 1 cup or 9 ounces all the way up to the big No. 10 can which contains about 8 cups of drained fruit. When a can label does not state its contents in cups, just divide the number of ounces by 8, and you'll have the approximate number of cups.

Canned pineapple juice comes in many sizes. The No. 2 can holds 2¼ cups; the big 46-ounce can, 6 cups.

Pineapple is extremely versatile. It can be used in salads, dressings, meats, and main dishes, as a garnish; in cakes and cookies and fillings; as pies and puddings; for delicate desserts and favorite quick breads; and, of course, as beverages and appetizers.

Here are a few pineapple recipes which you may like to try:

Frozen pineapple cheese salad

1 (8 ounce) package cream cheese
¼ cup mayonnaise
⅔ cup (1 small can) evaporated milk, chilled
2 tablespoons lemon juice
¾ cup chopped dates
1 No. 1 flat can (¾ cup) crushed pineapple, drained

Mash cheese. Blend in mayonnaise. Whip milk very stiff and add lemon juice. Fold in fruit and cheese mixture lightly but thoroughly. Pour into cold freezing trays. Press partition into place and freeze in cubes. Serve on crisp lettuce with or without salad dressing. Nice to serve on pineapple slices. Yields 16 large cubes.

Circle "P" barbecue chicken

2 broiling chickens
1 lemon
Salt
Paprika
Monosodium glutamate (MSG)
Freshly-ground black pepper
½ cup melted butter
½ cup white table wine
Fresh or dried herbs
6 to 8 slices canned pineapple
Curry powder
Butter

Have chickens split and quartered if large. Brush all over with cut lemon. Sprinkle with salt, paprika, MSG, and pepper.

Mix butter and wine (or vinegar). Snip in 1 to 3 teaspoons of fresh herbs (½ as much dried ones)—chives, parsley, thyme, rosemary, or tarragon.

Pour over chicken. Let stand several hours. Turn occasionally.

Barbecue slowly over charcoal or in oven broiler, until browned and tender, 35 to 45 minutes.

Turn pieces often and brush with marinade (the butter, wine, and herbs) often during cooking. Just before serving, brush pineapple with butter; sprinkle with curry. Brown lightly and serve with chicken.

Pineapple layer ring

1 package strawberry gelatin
1½ cups syrup from pineapple
2 tablespoons lemon juice
¾ cup strawberries
1 tablespoon sugar
1 No. 2½ can pineapple chunks
1 package lemon gelatin
¾ cup boiling water
2 tablespoons lemon juice
¼ teaspoon salt
1 cup cottage cheese
½ cup whipping cream
⅓ cup chopped walnuts

Dissolve strawberry gelatin in heated pineapple syrup, adding water if needed to make right amount. Stir in lemon juice.

Chill until thick but not firm. Halve berries and sprinkle with sugar. (Drained frozen berries may be substituted, strawberry juice used in place of water if not enough pineapple juice). Add 1 cup drained pineapple chunks and berries to thick gelatin. Pour into 8-inch ring mold. Chill firm.

Dissolve lemon gelatin in boiling water. Stir in lemon juice and salt. Cool and blend in sieved cottage cheese. (It is easier to sieve cottage cheese if it is frozen). Whip cream until stiff and fold in with walnuts. Pour into mold over firm red layer. Chill firm.

Unmold and decorate with water cress, lettuce, or parsley; whole berries; and pineapple slices. Fill center of ring with pineapple chunks.

From Day to Day

by Lois J. Hurley

ALMOST 30 years too late to qualify as honeymooners, my bridegroom and I accompanied by child, took a trip to Niagara Falls, a few weeks ago. En route we stopped off and spent a couple of days in the Ford Museum, Greenfield Village, and the Rotunda.

Here are enshrined many of the precious items with which our stupendous progress was accomplished. Simple bits of metal and crude mechanisms, in the hands of creative geniuses like Thomas Edison, Henry Ford, Firestone, Burbank, and a host of others, they brought us light and sound and travel and gracious living beyond the most hopeful dreams of their early users.

* * *

Stick your nose into the door of an old shop of 100 years ago, faithfully re-assembled. Stop and peer into a truly pioneer home. Peer is the right word; the rooms were almost totally dark. Smell the must of the ages. Think on the people who probably came and went in these tiny shops and homes. Dust, too, now, and what of themselves did they leave behind? Look about you; they left us almost everything we take so for granted in our everyday living.

* * *

In the Ford Museum, walk along the exhibit of living rooms as light entered them. First, the faint twinkle from grease lamps that penetrated the darkness only a few inches. Then the wick lamps came. Next, the first weak electric glow . . . stronger . . . stronger. Finally, incandescence. Next, fluorescence. Today, a living room beautifully and softly lighted in every nook and cranny at the nonchalant flick of a switch. It is marvelous.

* * *

Any woman will enjoy a trip down the aisles of homemaking and trace the progress of washing machines, irons, kitchen utensils, churns, and appliances. Sturdy and often beautiful as the old articles of hand-whittled wood and brass were, they were far inadequate in the light of today's advances in shining chrome and aluminum and plastics. Yet, they bespeak a way of life that nurtured our grandparents and great-grandparents and paved the way for us to enjoy handy homemaking with hardly a thought given to it.

* * *

As might be expected, the Museum gives tremendous space to the history of transportation. Do you think $10,000 is a big price for a deluxe automobile? A wealthy man of the west paid that much for a tally-ho, 80 years ago.

Do you remember the old black hearses with the drapes at the windows and the lanterns and plumes? There's one there, complete with rosewood casket. There are the stage coaches and the early railway trains and the horse-drawn street cars and the sulkies and surreys and hansoms and chaises and every moving vehicle in which a human being ever took a ride.

All antecedents of the fast motor cars we step into today and go from nothing to 60 in a second of time! Of the planes that soar us into the stratosphere as casually as Grandma used to walk down to the neighbor's!

* * *

Living history is what the Ford Foundation has striven to achieve in these 200 acres of buildings and collections. Not world-shaking history, but past ways of life that led into events and eras in which the more world-shaking things happened.

* * *

Kathy counted 38 honeymooning couples, for sure, the day we spent at Niagara Falls, and many probables. The "for sures" were for sure because the girls were dressed up so pretty in their trousseau clothes and the boys were so handholdingly protective. The "probables" had on slacks and Bermuda shorts and hadn't given too much thought to their looks. We thought brides shouldn't be so casual.

The 65-year-old honeymooners were the ones that interested me. There were lots of them and they seemed to be having just as good a time as anybody.

* * *

Niagara Falls truly awes me. Tons of water pour endlessly over the sheer rock drops in a cascading, green torrent that breaks into mountains of white spray as it hits the far below currents.

One can only observe a moment of silence when he first gazes at this majestic waterfall. It is best viewed from the Canadian side, but on either side you can walk right out to the edge of the falls and the water slips along directly under you. It is fearful and awesome and I would never join that intrepid group who have ambitions to seal themselves in a barrel and take a ride over the edge.

But we did defy death (mildly) in a boat ride up under the Falls in the Maid of the Mist, without which a trip to Niagara just wouldn't be authentic. For this you don slickers to protect yourself from flying spray and it is a tense moment as the boatman steers you up so close that you look up, up, up at the mountain of water pouring down, down, down.

* * *

One of the highlights of the trip was the dinner we had at the historic old terrace dining room that looks out over both the American and Horseshoe (Canadian) Falls. Here, high up at tables spread with the snowiest linen I ever ate from and some of the most gracious service I ever received, we ate a delicious dinner while the sun set on the falls and the giant floodlights were turned on them to transform them into a thing of fairyland beauty.

White light bathed them for the first half-hour; then colored filters were slipped over the lights and a play of purple and gold and blue and rose and yellow changed the scene from one of beauty to still greater beauty. Night at Niagara brings a meeting of man and nature in a scene that you would have to travel far to duplicate.

New patterns

Beginning October 1, at least half the patterns will be the modern, more convenient, printed type instead of the perforated type used for so many years. Due to the improvement in our pattern make-up, patterns will cost 35 cents each, beginning October 1.

7094. Adorable 9-inch doll with complete 10-garment wardrobe. Thrill your daughter with this wonderful gift. Pattern for doll and clothes included. Use gay scraps; sew easy.

7358. Pattern-ful of potholders are all different, gay, and easy to make. Use colorful scraps and bright thread. Seven potholders in pattern. Directions and embroidery transfer included.

7295. Set an elegant table with this doily of easy-crochet. Pineapples form the central design, with a pretty border of shell stitches. Crochet directions for larger doily 19 inches; smaller, 13 inches. Use No. 30 mercerized cotton.

7080. Please your little miss with this adorable helmet and mitten set. Easy to knit; crochet flower trim in gay colors. Directions for set in girls' sizes 4 to 14 included.

7100. Special greetings for Christmas company with this cheery "Santa" face apron. He's a handy helper for serving guests. Directions, embroidery, and applique transfers for apron, 16 inches long included.

7132. A graceful swan in white crochet—a pretty design to decorate your dining table. Crochet directions; body about 13 x 7½ inches. Use heavy Jiffy cotton; starch stiffly.

702. Toasty-warm slippers crocheted in a jiffy. These colorful styles are ideal for gifts—so easy and thrifty to make. Jiffy-crochet boots and slippers in knitting worsted; crochet soles, too. Sizes small, medium and large included.

Pattern Nos.	Size	HOARD'S DAIRYMAN, PATTERN DEPT. Fort Atkinson, Wis.	NO PATTERNS EXCHANGED
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		NAME_____ RFD_____	
		CITY_____ STATE_____	

4799
SIZES
14½—24½

4510
SIZES
36—50

4799. Look slimmer, trimmer, and taller in this smart princess style cut especially for the half-size figure in sizes 14½ to 24½. Size 16½ takes 4 yards 35-inch.

4510. The off-center buttoning of this step-in style spells flattery from collar to hemline. Women's sizes 36 to 50. Size 36 takes 4¼ yards 35-inch; ½ yard contrast.

4781. Lucky juniors! Sew this dream dress in a jiffy. It has lowered princess waistline and whirly skirt. Junior miss sizes 11 to 17. Size 13 takes 4½ yards 39-inch fabric.

9101. Girls love the yoke bodice, round collar, and whirlaway skirt. Perfect for school. Girls' sizes 6, 8, 10, 12, 14. Size 10 takes 2⅞ yards 35-inch; ¾ yard contrast.

9340. Easy-sew jumper and companion blouse designed especially for the shorter, fuller figure. Half sizes 14½ to 24½. Size 16½ jumper, 3⅜ yards 39-inch fabric; blouse, 1⅝ yards.

4545. A busy Mom can whip up these wonders in a jiffy. Designed for beginners. Child's sizes 2, 4, 6, 8, 10. Size 6 blouse, 1 yard 35-inch; jumper 1⅝ yards 35-inch nap; jacket 1⅞ yards.

4844. Mother-to-be! Look comfortable and pretty in these graceful maternity tops. Just mix-match with the slimming cut-out skirt. Maternity misses' sizes 12 to 20. Size 16 top, 2½ yards 35-inch; skirt 2⅛ yards.

9063. Jiffy-sew this easy shirtwaist dress with step-in style, convertible neckline and handsome pockets. Misses' sizes 12 to 20; 30 to 42. Size 16 takes 5⅛ yards 35-inch.

4605. Easy to sew and a joy to wear, the sleek, slim lines are pure flattery for your figure. Misses' sizes 10 to 18. Size 16 takes 3¼ yards 39-inch fabric.

7173. Use remnants of checks or plaid 'n' plain for this crisp school dress. Easy to sew and embroider. Child's sizes 2, 4, 6, 8, 10. Pattern and embroidery transfer included. State size.

4671. Soft, simple lines of this princess dress adapt so beautifully to many different occasions. Misses sizes 12 to 20; 40. Size 16 takes 4½ yards 39-inch fabric.

9303. Teens will adore this versatile princess jumper and blouse with empire-lines and nipped-in waist. Teenage sizes 10 to 16. Size 12 jumper, 4⅞ yards 35-inch nap; blouse 1¾ yards 39-inch fabric.

4844
SIZES
12—20

9063
SIZES
12—20
30—42

7309. Favorite jumper is a fashion "must" for winter. Iron-on flowers in combination of pink and green spark the neckline of the solid color version. Misses' sizes 12 to 20. Tissue pattern and color transfers included. State size.

4781
SIZES
11—17

9101
SIZES
6—14

9303
SIZES
10—16

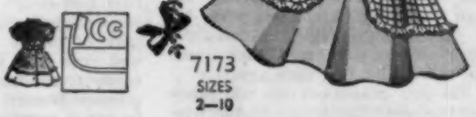
4671
SIZES
12—20
40

4605
SIZES
10—18

9340
SIZES
14½—24½

4545
SIZES
2—10

7309
SIZES
12—20



7173
SIZES
2—10

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POULTRY

Joe W. Sicer

Cage layers are increasing

Cages have some definite advantages over floor housing. An installation may be profitable on your farm.

ONE of the chief topics of conversation at a recent meeting of the American Poultry Hatchery Federation was the wide spread increase in the use of laying cages for layers.

Until the last few years, cages have been in common use only in those areas where the climate was mild. About the only housing provided was a roof over the lines of cages. Many people felt that, in northern climates, the cost of housing plus the cost of cages would make an investment too high.

It was also felt that cold temperatures would present serious problems with frozen water in the extensive water troughs and that layers standing on a wire floor in a cold house would not thrive.

The past few years have proved that many of these fears were not well-founded. Cage operations have been started in the Midwest states. Some of them are strictly commercial poultry establishments but most of them are side-line enterprises to other farming operations.

More eggs per bird . . .

The first big advantage is more eggs per bird and fewer pounds of feed per dozen eggs. Look at the figures of egg production per hen, feed required, and production cost as reported by these three experiment stations.

Hens on floor	Hens in cages
California	
204 eggs	241 eggs
Texas	
217 eggs	242 eggs
208 eggs per 100 pounds feed	229 eggs per 100 pounds feed
Alabama	
196 eggs	225 eggs
Production cost per doz.-43.8 cents	Production cost per doz.-37.2 cents

When the layers are in individual cages, you can know for sure which birds are laying. A variety of gadgets are used to keep records of production.

Since the culls can be spotted sooner, they are in better weight when sold and often can be marketed to a better advantage.

Mortality runs lower in cages because of the closer culling and because of less danger of tracking infection in on your shoes.

Capacity can be kept full . . .

When cages are emptied by culling, they can be refilled at once with new pullets. With floor operations, the house is used at decreasing capacity as the year progresses.

The periodic brooding which such a replacement program necessitates is advantageous in that less brooding equipment is needed to raise the same number of pullets in a year. It also spreads work throughout the year since the broods are usually spaced 8 to 12 weeks apart. It also relieves the burden of financing one large flock of pullets until they start laying.

LAYING CAGES usually measure 10 by 18 inches. Here Marvin Seifert, Posey County, Indiana, is shown as he cleans the water trough with a long-handled brush.

On the other hand, it does increase the disease hazard somewhat with birds of different ages always on hand.

So far, there seems to be a psychological appeal in cage-produced eggs. In many localities, the cage operators report that it is easier to sell their eggs at a higher price. Others say that the fact that they now have pullet-size eggs the year around has enabled them to work up a good outlet for these small eggs at good prices.

Cannibalism is eliminated; there is practically no egg eating in properly-constructed cages and broodiness is reduced.

Disadvantages, too . . .

Of course, everything is not a bed of roses for the cage operator. There is the problem of flies breeding in the droppings under the cages. This can be controlled though with regular applications of malathion or other fly sprays.

The eggs will get dirt rings on them from the wire floors if the egg racks are not kept dusted.

Management with cage layers must be more exacting because the hens are dependent upon you for everything.

While investment in cages is greater, for a person just starting with chickens, it need not be much larger because he will have no nests, feeders, waterers or perches to buy.

Freezing water can be a problem but with a fairly well insulated house, only a little room heat is needed even in zero weather. Many operators use only electric heating tape in the water troughs.

The day of the small farm flock is not over by any means but the adoption of cage operations is something that should be given serious thought by many poultry raisers, both large and small.

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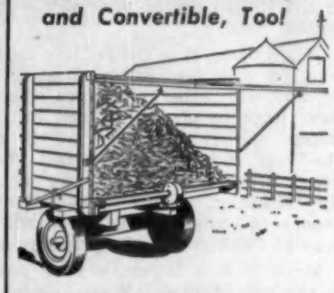

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YOUNG DAIRYMEN

BASIC FARM PRACTICES

What is an adequate production record?

WHETHER you need private records, junior dairyman or high school records, owner-sampler records, standard D.H.I.A. records, or official breed association records is determined by what you want the records to do for you. The first concern is to get a reliable measure of each cow's production. In the past, cows were evaluated on the basis of short-time records. This period has gradually increased from 24 hours to periods of 10 days, 14 days, 30 days, and now to a full year and lifetime production.

Since milk is sold on the basis of pounds and butterfat test, the production record should measure the pounds of milk and butterfat test of the milk. In addition to a record being accurate, it must also be practical to obtain. Research work has proven that reliable production records can be obtained by determining the production and test of a cow for one 24-hour period each month. The production for this 24-hour period is multiplied by the number of days in the month. By adding the production for the months in a lactation, the lactation record is obtained. By adding the production for 12 months, yearly production is available, and by keeping continuous yearly records the lifetime record is completed.

If these records are to be correct, it is obvious that the 24-hour test period must be truly representative of the month. If the test period is longer or shorter than 24 hours, or milking, feeding, and other management practices are changed on test day, the record will be wrong.

Who should weigh the milk, take samples for testing, and calculate records? If the records are entirely for the private use of the dairyman, he can do the entire job or hire anyone he wishes to do all or part of the job for him. The dairyman who keeps "private records" can make them as complete and accurate as his time and facilities allow. Some dairymen prefer to weigh the milk and take samples and pay the dairy improvement association for testing and calculating his records. These are "owner-sampler" records and are sufficient to aid the dairyman in his herd management program. Many boys enrolled in vocational agriculture keep production records on the herd. The milk is weighed and sampled once each month on the farm. Facilities are available at the high school for testing and calculating the records. These junior dairyman or high school records provide the information needed for proper herd management.

When records are used for proving sires, advertising purposes, recognition by the breed associations, comparing herds, and for research purposes, additional requirements are needed. Since records from cows in different counties or states may be combined and used for sire proving or research studies and records from different farms are being compared, uniformity is important. The total environment cannot be controlled but factors are used to correct differences in age, length of lactation, and number of milkings per day. These records are analyzed and summarized in a central place. The standard D.H.I.A. and official breed association (A.R. and H.I.R.) methods were developed to meet these additional requirements. More details of different methods will be given in later articles.

—J. W. Crowley
—R. P. Niedermeier

Market hogs at lighter weights

AS A producer in the hog raising business, you are taking part in one of the largest segments of the livestock industry. The annual crop of hogs in the United States generally runs above 80 million head.

Hog raising is a competitive business. You compete with feed prices, disease, the weather, and with other producers when you send your hogs to market. When too many producers market their hogs at the same time, the hog run is usually too "heavy" and prices drop. Buyers are more selective when this situation occurs. When there are few producers competing on the market, the run may be "light," and the prices remain strong.

Many factors influence your profit or loss in the hog business. What you make may be determined by how well, you, as a producer, perform the jobs that lead to economical production. Let's take the feed conversion factor for hogs of different weights. A 154-pound hog will take an average of 552 pounds of feed or will gain 1 pound for each 3.6 pounds of feed consumed. A 207-pound hog will consume 802 pounds of feed and gain 1 pound for each 3.87 pounds of feed. A 283-pound hog will consume 4.2 pounds of feed for each pound of gain. In comparing the feed conversion for the various weight hogs, they were fed a well-balanced ration.

Feed needed to produce each additional 100 pounds pork

	Feed/100 pounds gain
a 40-to 100-pound pig	304
100-to 200- " "	359
200-to 300- " "	415
300-to 400- " "	470
400-to 500- " "	510

You will have to agree that it is often more economical to produce hogs of lighter weight, year in and year out. You must also keep in mind that hogs of the same weight have different ability to convert feed into pork. As a rule, hogs weighing under 225 pounds have more desirable carcasses and yield a much higher per cent of lean to fat than do heavier hogs. A comparison of different weight hogs follows:

Wt. of hog	Meat	Meat for	Lard	Lard for
Pounds	Pounds		Pounds	
225	133	2 people	27	2 1/2 people
300	178	3 "	48	4 1/2 "
400	232	3 3/4 "	80	7 1/3 "

You can easily see why it is important to produce lighter hogs which produce a more desirable product with less lard for which there is no readily available market.

Hogs that are rapid gainers are ready for market at 5½ to 6 months of age. They can produce a high-quality carcass that will meet the competition of other kinds of meat on the market today. The trend is to leaner cuts of pork with higher quality, and you, as a pork producer, will need to help meet that challenge.

—F. J. Giesler

Use artificial lights

CHICKENS know nothing about the 8-hour day. They operate most efficiently on a 13- or 14-hour day. When the number of hours of daylight drops below this figure in the fall, you should begin to provide artificial light and continue to do so until the days lengthen in spring.

Use one 40-watt bulb for every 200 square feet of floor space. Hang the lights 6 feet from the floor on a line midway between the front and back of the house, and shade the bulb with a reflector that is 16 inches in diameter and 4 inches high.

Lights may be used only in the morning, only at night, or both morning and night to provide the necessary number of hours. There is some advantage in using only morning lights, since the darkness comes gradually in the evening. When evening lights are used, darkness comes suddenly with the turning of a switch and the birds may have difficulty getting to the roosts.

Don't make any sudden changes in lighting schedule. Regularity is important. Once started, the lights should be used all winter.

Some poultrymen use all-night lights, with considerably less intensity of light. A 15- or 20-watt bulb is enough for the ordinary colony laying house. The idea is to provide just enough light so the birds can find feed and water throughout the night.

—H. R. Bird

Apply enough lime

LIME used on pasture soils is applied to correct an acid soil condition and to make the soil favorable for the growth of legumes. In order for the lime to be effective, it is necessary that it be thoroughly mixed with the soil and preferably at least six months ahead of seeding. It takes from six months to a year for the lime to make the soil pH favorable for legume production.

Just broadcasting lime on the surface of a bluegrass or an established pasture is of little immediate value. In the renovation of permanent pastures, it is recommended that the necessary lime be applied according to soil test and then broadcast and worked into the soil the summer or fall before the reseeding is done.

Where soil conditions are extremely acid or where a seeding is to be made sooner, it is recommended that some extra finely-pulverized or quickly-available source of lime be used in addition to commercially-ground limestone. When lime is applied or worked into an acid soil shortly before the seeding is made, the seed is still being sown in an acid soil condition and chances of success are much less than if the lime had been thoroughly mixed with the soil six months to a year ahead of seeding.

—F. V. Burcalow

BARNEY FARMLAN

"I'm sure my son, Barney, didn't intend to break your window, but I'll see that he's punished."

How to conduct a land judging contest

A land judging contest in your community will awaken dairymen to the importance of good soil management.

by Dick Wilson

4-H AND F.F.A. BOYS judging land by observing and handling the topsoil and subsoil. They must determine the capabilities of the soil.

BUT what is land judging?" you ask. Edd Roberts, Oklahoma extension soil conservationist says it is a method of teaching soil conservation based on learning by competition.

Much like dairy cattle judging, there are four different fields for comparison. It is based on the participant's understanding of land classes and the soil's ability to produce vegetation, just as dairy cattle judging is dependent upon the judge's understanding of factors related to good milk production.

In land judging we look for differences in the soil that will affect crop yields over a period of years, and crops that are best suited to the type of land. For instance, in many cases cultivated land would yield higher dollar returns by returning it to grass. The contestant learns these facts by attending judging schools.

He also is introduced to recommended treatments for different classes of land. In the contest, he must make his own decisions, based on observation of the fields and his previous training and experience.

The national contest has separate divisions for 4-H, F.F.A., adults, colleges, and women and girls, but a community event can combine the divisions if desired. Four individuals compete as a team, but only the top three scores are counted in compiling the team grade.

Anyone can organize and conduct a land judging contest, but Roberts suggests the county agent or vocational agriculture teacher as logical leaders. One of the first steps is selecting a committee to obtain awards and prizes. A committee also should be appointed to supervise publicity and promotion activities for the event. Next, the date should be selected and publicized.

Select competent judges . . .

Immediately before the contest a judging committee should be selected, preferably soil scientists from local agricultural agencies. They will be responsible for selecting sites and making official placings for the event.

Fields, numbered 1, 2, 3, and 4, are generally used in each contest. Pits three feet deep are dug in each field so that the contestants can view the soil profile and examine generous samples of both subsoil and topsoil that are placed nearby.

The contest chairman should select field supervisors and guides to direct the various groups from one site to another well in advance. The field supervisors should be trained technicians who can give pertinent information to each group as it visits his field.

The author is a member of the agricultural information service at Oklahoma A & M College.

As in any co-operative project, meetings should be held well ahead of the actual event so each individual is aware of his duties before and on contest day.

If it is decided to hold the land appreciation school and judging contest on the same day, at least two hours should be reserved for schooling. Purpose of the school is to familiarize contestants with land judging factors, judging procedure, and the scorecards.

On the contest day, participants are given land judging scorecards for each field. The members of the first team are designated 1A, 1B, 1C, and 1D. Teams 2, 3, etc., are assigned likewise. For example, contestant 1A will start at field 1; 1B, at field 2; 1C at field 3; and 1D at field 4. Each member of the team is placed in a separate group, which is alloted approximately 30 minutes to judge each site before rotating to the next field. This arrangement expedites handling and tabulation of the results.

Score card that works . . .

The land judging scorecard is divided into two parts. Part one consists of land class factors, a study of which determines the land capability class, and part two provides for the selection of proper land treatments from listed vegetative, mechanical, fertilizer, and soil amendment practices.

The original surface soil depth, cultivated or grassland, and other pertinent facts about the soils are given to each contestant as he visits the field. Part one of the scorecard is designed to give maximum aid in determining soil depth, texture, and permeability as the contestant views a soil profile and examines the soil with his hands.

In all, six factors affecting the class of land are listed on part one, with multiple choice answers under each factor. For instance, under the general heading of "slope" are listed the following options: nearly level; gently sloping; moderately sloping; strongly sloping; steep; and very steep.

The contestant also must decide whether the soil is deep, moderately deep, shallow, or very shallow. By feeling the soil in his hands, he determines whether the texture is coarse, medium, or fine.

Movement of the air and water in the subsoil, or soil permeability, is determined by handling the soil. By crumbling it in his hand, he decides whether it is dense, loose, or tight; then classifies air and water movement as rapid, moderate, slow, or very slow.

By observing the topography of the field, he determines the slope. Next he examines the topsoil to see how much of it has been removed by erosion; classifies damage as none to light, moderate, severe, or very severe. Then he must mark surface drainage conditions as being excessive, good, fair or poor.

Finally the contestant must decide which of the major factors (texture, permeability, depth, slope, erosion, and drainage) are most important; then determine the land class of the field. That is, Class 1, Class 2, etc., based on his decisions.

Decides on treatment needed . . .

After he classifies the field, the contestant decides which of the recommended practices are needed for proper treatment. Some of the land will need lime or other fertilizers, so a sign showing results from a soil test is set up in the field. The contestant must then decide which fertilizer treatment is needed from a number of choices listed on the scorecard. More than one treatment may be needed.

The same is true of vegetative treatments, some of which are: controlled grazing; strip cropping; soil conserving; and improving crops every third or fourth year.

If the field needs terracing, a drainage system, or similar practices to bring it into full production, the contestant selects appropriate remedies from the mechanical section of part two on the scorecard.

When the contestants complete the judging of a particular field, their cards are collected by the guide and given to an individual who takes them from the field to the headquarters office. Their work is then graded according to the official placings of the judging committee and the scores tabulated by a grading committee which consists of 6 to 8 persons per 100 contestants.

A perfect score is 60 points for each field and 240 for the contest. In case of ties, a class is used as a tie breaker. The judges should decide before hand which field or fields will be used for this purpose.

Some 30 other states also have adopted the land judging scorecard, and 39 representatives from 10 foreign countries attended the first International Land and Pasture Judging Contest at Oklahoma City this year to learn how to conduct the events.

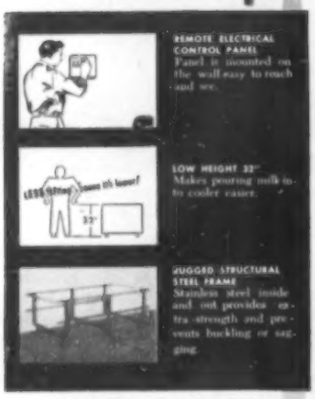
Land judging has come a long way since its birth some 15 years ago, and with your help, Roberts believes it can become the greatest soil and water conservation influence of the century.

THE END

Additional information on land judging can be obtained by writing Edd Roberts, Extension Soil Conservationist, Oklahoma A & M College, Stillwater, Oklahoma.

A copy of circular 598 "Land Appreciation Training Schools and Judging Contests in Oklahoma" and sample scorecards will be sent upon request.

Setting the pace...
the Kupfer Bulk Milk Kooler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The KUPFER KOOLER is stainless steel inside and out. It's unmatched for economy; 4-6 hours operation daily cools the milk and maintains it at 38°. The low 32" tank height makes cleaning easy and pouring milk is a pleasure not a chore. No steps or platforms are needed, thus accidents are prevented.

So don't buy a cooler until you've seen the Kupfer Kooler. It costs less to own and it costs less to operate because it cools just one thing—MILK!

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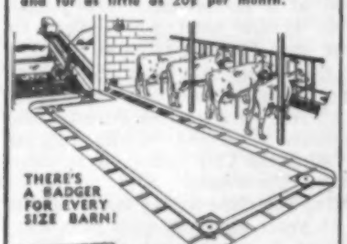

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SWINE

by R. H. Grummer

Quickie answers

Are there large black hogs in the United States?

Yes. This English breed has been introduced into our country and has been combined with other breeds. As yet the breed has not been fully proved as to what contribution it might make toward improving our swine population.

Am I correct in assuming that the Poland China breed is a poor carcass breed?

You are not correct. Results of carcass contests and carcass studies indicate that the Poland China yields excellent carcasses. Some of the heaviest-muscled carcasses on record have come from them.

How old and how heavy should a gilt be before breeding?

Eight months old and at least 275 pounds in weight. Some gilts may not reach sexual maturity until after eight months.

Can sows be fed all the silage they want to eat?

Yes. Of course, they should be given grain and protein supplement along with the silage.

Will a gilt from a litter of four have small litters herself?

Not necessarily; however, it is not a good idea to select breeding animals from litters of less than eight.

Should buckwheat be used as a hog feed?

Buckwheat may make up as much as 15 to 20 per cent of the ration and it should always be ground because of the hard hull.

What is the National Swine Council?

It is an organization devoted to the improvement of the swine industry.

What should a good thrifty 8-week-old pig weigh?

At least 35 pounds.

Can a hog weighing 250 pounds be a meat-type hog?

Once a meat-type, always a meat-type. Yes, a 250-pound-hog can be a meat-type and it could still be a meat-type at 800 pounds.

Does the Landrace hog have more ribs than other breeds?

Hogs do vary in number of ribs; not only between breeds, but also within breeds. Landrace reportedly average about one rib more than some other breeds.

How winter pasture compares

Many experiments have been conducted showing that pasture replaces a portion of the concentrate feed and thereby causes a saving in total feed costs. Sows can be forced to consume considerable forage during pregnancy without lowering their reproductive performance. Many hog producers have only "summer" pasture available, but in central and southern United States pasture can be available during much of the winter.

C. E. Barnhart and T. W. Cathey of the University of Kentucky have reported the following experiment comparing winter pasture and dry lot for bred sows.

Twenty brood sows were randomly divided at breeding and placed either on Balbo rye pasture or in a dry lot. The rye had been cross drilled at the rate of four bushels per acre in August and had produced a good heavy growth when the sows were turned in on it the first part of November.

Three rye fields of approximately one acre each were available and the sows were rotated from one to another as they began to graze the pasture down. The sows were hand-fed twice a day a well-balanced, complete, mixed ration. A simple mineral mixture was self-fed. Both groups of sows were watered with automatic waterers.

The dry lot sows were fed six pounds of feed per head per day for approximately the first two-thirds of the gestation period and eight pounds daily for the remainder of the gestation period. The sows having access to the Balbo rye were fed three pounds of the same gestation ration for approximately the first two-thirds of the gestation period and four pounds daily for the last one-third of the gestation period.

One sow in the pasture group had trouble at farrowing and lost her litter. This sow was not included in the data presented.

Results of this trial are summarized as follows:

	Rye pasture	Dry lot
Number of sows	9	10
Av. number pigs farrowed	10.7	8.9
Av. no. pigs farrowed alive	9.8	7.7
Av. birth wt. per pig, lbs.	3.0	2.5
Av. gain in wt. per sow, lbs.	79.4	62.5
Total feed per sow, lbs.	399.2	771.4
Total feed cost per sow*	$13.97	$26.99
Feed cost per live pig*	$ 1.43	$ 3.50

*Gestation sow ration cost $3.50 per cwt. Cost of the pasture was not included in the feed cost.

The more widespread use of Balbo rye pasture for bred sows during the winter months should be practiced. Results of this and similar experiments conducted previously at the Kentucky Station clearly demonstrate that good Balbo rye pasture can replace an economically important percentage of concentrates heretofore thought required by bred sows. In this experiment the sows on pasture were fed 50 per cent less feed and farrowed more pigs per litter that were larger and stronger at birth.

Swine producers looking for ways to produce hogs more efficiently will make more use of pastures for bred sows, saving expensive concentrates for growing pigs.

"Well, there's the new garbage disposal you've been hollering about!"

SPECIAL OPPORTUNITIES

— Where Buyer and Seller Meet —

The rate for advertising in this department is 30 cents per word per insertion, except for "help wanted" and "position wanted" advertising which is only 20 cents per word per insertion. Count address. "J. W. Foley, Route 13, Green Bay, Minnesota," is considered as eight words. Blind advertisements must be signed: "BOX ☆, care Hoard's Dairyman, Fort Atkinson, Wisconsin" and count as 8 additional words. Count each initial or group of figures as a word. SEND CASH OR CHECK WITH ORDER. Copy must reach us four weeks ahead of date of issue. NEW ADVERTISERS MUST FURNISH REFERENCES. Send order to HOARD'S DAIRYMAN, Fort Atkinson, Wisconsin.

DAIRY CATTLE

BUY your vaccinated dairy cows, heifers and calves direct from the farmers where quality prevails. GEO. E. SWANSON, Rice Lake, Wisconsin. Phone 944-R. 12-7

ARRIVING weekly from northern Wisconsin, choice Holstein springing heifers and cows. Satisfaction guaranteed. WILLIAM CLOW, Plainfield, Illinois. Telephone 7-3232 or 7-3236. 12-8

ATTENTION dairymen and cattle dealers. We can furnish you Holstein heifers to freshen this fall. Cows of all breeds. Let us know your needs. We can supply them. BOTTEMA FARMS, Bridgeport, Ind. Plainfield 8266. 20-*

KENYON Brothers Farm serving the dairy farmer for forty years. Large selection of choice Holstein cows and first calf heifers, fresh and close springers, service bulls, T.B. and Bang's tested. In carload or truckload lots. KENYON BROTHERS CO., Elgin, Illinois. Phone Elgin 1818. 1-*

KEATING Brothers Farm offers large selection fresh and springing selected cows and heifers, strictly quality. Dairymen—buying on order will save you time and money. Call or write Fort Atkinson, Wisconsin. Telephone JOrdan 3-5905. 18-*

LARGE selection of Holstein and Guernsey springer heifers; also younger heifers and young springer cows. CHESTER PRODERG, Valparaiso, Indiana. 17-*

HOLSTEINS and Guernseys—Large selection of choice springers and fresh cows and heifers. TB and Bang's tested. STANLEY BURNIDGE & SON, "Grand Hotel for Dairy Cattle," Elgin, Illinois. (Hotel accommodations). Established 1918. Also good selection at Claremore, Okla., Branch—Phone: Claremore 116. 1-24

REGISTERED Holstein calves. D. L. CAVEY, Elkhorn, Wisconsin. 11-*

NORTHERN dairy cattle direct from farmer-breeders. Fieldmen available. Orders filled. T.B. and Bang's tested. BARRON COOP. DAIRY CATTLE SALES ASS'N, Glen Krahenbuhl, Mgr., Barron, Wisconsin. 22-*

REGISTERED—Guernsey calves. K. V. FARM, Elkhorn, Wisconsin. 11-*

REGISTERED Holstein cows, heifers. Certified, Accredited. PAUL VAN CLEVE, Littlestown, Pennsylvania. 2-*

CHOICE Holstein and Guernsey dairy cows and heifers. Delivered on approval. Some vaccinated. JAMES E. WELCH, R#1, Mukwonago, Wisconsin. 2-*

HOLSTEIN cows and heifers with production, type and size from our foundation Wisconsin herds. Artificial breeding, calfhood vaccinated, Bang's and T.B. tested. PIPER BROS., Watertown, Wisconsin. Telephone 2170. 6-*

CHOICE Holstein and Guernsey dairy heifers from 350 to 900 pounds. Holsteins 13½ cents per pound and Guernseys 11-13 cents per pound. All heifers sold by the pound. Also springing cows and heifers. Write or call. LINK BROTHERS, INC., Minong, Wisconsin. 14-*

CLEAR View Farm—For 21 years Iowa's Reliable Dairy Cattle Brokers. Choice Minnesota, Wisconsin and Iowa Holsteins. CLEAR VIEW FARM, phone 5-2651, Blairsburg, Iowa. 14-*

NORTHERN dairy cattle. Registered or select high grades. Direct from quality herds. R. F. CUELLER, Amery, Wisconsin. 14-*

300 Holstein cows and heifers to choose from. Fresh, close up, and in all stages. You won't find as many good bagged and quality cattle on hand anywhere. In doubt? See for yourself. HARRY BERGER DAIRY CATTLE CO., Rosemount, Minnesota. Phone 4521. 14-10

LARGE selection of choice Holstein springing cows and heifers. GEORGE BRICHER & SON, St. Charles, Illinois. Phone 2347 or 5895. 17-10

OFFERING 40 high grade Jersey cows and heifers to freshen soon. A. E. MILLER, Rhineland, Missouri. Phone 6026.

HOLSTEINS, Box 50, Watertown, Wis. 18-7

CANADIAN registered Ayrshire, Holstein, and Guernsey springer cows and heifers. Accredited. Vaccinated. PEARSON BROTHERS, Avonsyde Farms, Waterdown, Ontario, Canada. 18-spl

STOCKMEN'S SUPPLIES

MASTITIS Testers. Send for free sample and literature. LARAY MFG. CO., Pataskala, Ohio. 20-*

HORN weights. Made in 4 sizes ½ lb., 1 lb., 1½ lb., and 2 lbs. Tattoo markers $5.25 postpaid, includes set of numbers, bottle of ink, and full directions. We also carry complete line of ear tags, neck chains, veterinary instruments, supplies, serums, remedies; in fact, everything for the stockman. Write for free catalog. BREEDERS SUPPLY CO., Council Bluffs, Iowa. 24-*

NEW, added potency. Use Masti-Kure #5, the most effective treatment for acute and stubborn chronic mastitis. High potency formula includes 500,000 units of penicillin, 250 mg. Dihydrostreptomycin and 500 mgs. of double Sulfonamides, plus an added 50 mgs. of Neomycin and 7.5 mgs. of Cobalt Sulfate at no extra cost. Highest quality ingredients assure quick results at low cost of only $6.85 per dozen tubes. Dealer inquiries invited. Write MASTI-KURE, No. Franklin 2, Conn.

ARTIFICIAL breeding equipment. Largest, most complete line. Write for free catalog. NASCO, Fort Atkinson, Wisconsin. 1-*

CATTLE MARKERS

LARGEST, most complete line of cattle markers and livestock supplies. Free catalog. NASCO, Fort Atkinson, Wisconsin. 14-*

COLORED nylon, aluminum and brass. Send for catalog. GEO. F. CREUTZBURG & SON, Drawer 152-H, Wayne, Pennsylvania. 18-*

CATTLE MARKERS

DAISY Cattle Markers complete with chain, brass tag for horns and neck. Write for folder. GOLDEN ARROW FARMS, Dept. C, Huntington, Indiana. 16-*

DAIRY EQUIPMENT

NEW 7½ gallon stainless steel milking machine pails $22.00. Vacuum pumps. WILLIAM REID CO., 2271 Clybourn, Chicago, Illinois. 12-10

ENJOY a Heisler Milker Washer 365 days per year. Priced low for the average farmer. Tested three years. Farmer dealers write: HEISLER PRODUCTS, Springport, Mich. 17-4

STAINLESS steel milk strainers that resist milkstone. 18 qt. 6½ disc for $20. 16 qt. dairy pail. $12. 8 qt. dutch oven, $14. Wisconsin made. Write J. M. DeWITT, 944 N. 25th St., Milwaukee, Wisconsin for price lists and descriptions.

100 gallon Damrow MV Vapor Film Pasteurizer. One Specialty Brass Surface Cooler 24 tubes 48 inches. Excellent condition. $500. J. H. ABRAHAMS, 700 Harrison, Topeka, Kansas. 18-2

REF. bulk milk farm tanks closeouts. 120 gal. no comp. $950; 400 gal. no comp. $1145; 200 gal. no comp. $870; 300 gal. no comp. $895; 200 gal. with comp. $1095. EOS, 4134 Woodleigh, Pasadena 3, Cal.

HAY AND BEDDING

DEHYALFALFA Chops, with molasses. Baled hay. SCHWAB BROS. MILLS, INC., New Bavaria, Ohio. 9-*

FEED BAGS

WE pay highest prices for your empty cotton and burlap feed bags. Write for our quotations. THE DAYTON BAG AND BURLAP COMPANY, Dayton, Ohio. 1-*

FARM EQUIPMENT

COW stalls, pens, steel windows, hay carriers, steel fence post, post pullers. Immediate shipments. STANDARD EQUIPMENT, INC., Bel Air, Maryland. 18-*

ELECTRIC Welders. New, heavy duty, 180 Amp. Free trial. Dealerships open. 8159 South Pleasant, Department L, Minneapolis 20, Minnesota.

GUARANTEED Silo-Matic silo unloaders—Also auger bunk feeders—feeds up to 300 head in 20 minutes automatically. Wet, hard packed or frozen silage no problem. 30 days free trial. Low cost. Write RAILOC CO., INC., Plainfield, Illinois. 11-*

SAVE on tractor parts—Buy direct from nation's largest combination stock of new and used parts. Free 1956 catalog. CENTRAL TRACTOR PARTS COMPANY, Des Moines, Iowa. 1-spl

BUY surplus direct from government at tremendous savings. Farm tools, machinery, tractors, jeeps, trucks, power units, hundreds others listed in our Bulletin, price $1.00. SURPLUS SALES, Box 168HRA, E. Hartford 8, Conn. 17-2

FARMS FOR SALE

140 ACRE modern dairy farm. 100 tillable. ALWIN'S FARM SERVICE, Reedsburg, Wisconsin. Many other farms. 16-4

VIRGINIA livestock, dairy farms and country estates. P. M. BROWNING, Realtor. John H. Hitt, Associate, Culpeper, Virginia. 12-*

FOR Sale—188 acre dairy farm near Oshkosh, Wisconsin. Fully stocked. Good buildings, modern equipment. Inquire BOX 693, care Hoard's Dairyman, Fort Atkinson, Wis. 9-*

RETIRING—Moving to California. Owner will sell his Indiana 536 acre, highly productive dairy farm at attractive price. Farm has 500 tillable acres with creek running through it. Cow barn with 52 stanchions, barn cleaner, pen barn attached. Milk house with bulk 300 gallon tank and refrigerator. Two story chicken house. Large tool house. One large, modern home. Two tenant houses. 60 miles from Chicago, 4 miles from La Porte. Excellent schools and churches. Write MR. JOHN SCHOLL, 602 Lincolnway East, La Porte, Indiana. 17-2

ATTRACTIVELY priced: Profitable 450 acre feeding and grain farm. 30 acres woodland. 400 acres under cultivation, limed and fertilized. Abundant water. Modern two family home. 1 silo, 3 corn cribs, capacity 10,000 bushels. Well fenced. Now feeding 150 steers and 900 hogs. 6 miles from La Porte, Indiana. 65 miles from Chicago. Write MR. JOHN SCHOLL, 602 Lincolnway East, La Porte, Indiana. 17-2

180 ACRE farm, central Wisconsin. 29 cows, new home, all modern machinery, $25,300, complete. 1/3 down. Many other good farms, ask for free list. VERN STEVENS, Route 3, Marshfield, Wisconsin, representing Johnson Realty. Phone Spencer 2236. 18-6

HIGHLY improved 120 acre dairy farm in Wood County, Wisconsin. Large frame house with furnace; electricity; hot and cold water; bath. Modern barn with 34 steel stanchions; second barn for young stock; machine shed; two silos; double garage; chicken house; corn crib. Good land. Price $18,000. For further particulars write: F. J. GLANVILLE, 2030 Church Street, Wauwatosa 13, Wisconsin.

FOR Sale: Dairy farm of 148 acres, all open, available for pasture or cultivation. Completely equipped for Grade A operation in $6.25 per cwt. milk market. Available August 10, 1956. J. T. NEELY, JR., Box 880, Rock Hill, S. C.

FARMS FOR SALE

208 ACRES—140 improved pastures. 50 cultivation, two fish ponds, four springs, $15,000.00 home, tenant house, two barns, dairy barn equipped. Milk base. ¼ mile highway frontage, $35,000.00. $12,000.00 cash, balance long terms. Machinery available. Reason for selling, other interest. JOHN MANUEL, Bonifay, Florida. 18-*

LARGELY level 253 acre lakeshore farm. Good seven room and bath, full basement home; modern conveniences. Well equipped 22 cow basement barn. 35 ft. dome-roofed concrete silo. Double garage. Grade "A" milkhouse. Other buildings. 100 acres fields. About 400 ft. lake frontage. Reasonably priced. Only $63.50 per acre or $16,000. BAKER LAND & TITLE CO., Land Specialists Since 1874, St. Croix Falls, Wis. 17-2

GOOD dairy farms: Best mild climate; longer grazing. Write for bulletin or your requirements. LEWIS FARM AGENCY, Lenoir City, Tennessee. 13-4

SALE, profitable Guernsey and Broiler farm, Piedmont, North Carolina. Net income including depreciations, $8,715.00, average 6 years. Particulars write WARD SNARR, Siler City, N.C.

NORTH Carolina Dairy Farm near Wake Forest; 400 acres; aluminum loafing barn; 3 stanchion pipe line milking parlor; $30,000 modern city home; Brown Swiss and Holstein milking herd; $6.25 market; write J. A. SAUER, Rt. 3, Wake Forest, N. C. 18-3

BIG Strout Catalog! Mailed free! Farms, homes, businesses, bargains galore; Accurate, reliable descriptions of over 3000 properties in 36 Coast-to-Coast States! Livestock, equipment often included, many with low down payments and easy terms! World's largest—Serving you 56 years! Depend on STROUT REALTY, 7-TF So. Dearborn St., Chicago 3, Illinois. 18-9

273 acre modern equipped dairy farm, maximum soil fertility level, supporting Holstein dairy herd of 60-70 cows with a butterfat average of over 500 pounds per cow for past five years. A new Surge pipe line, walk-through 3 stall platform type milking unit. Located one mile east of Chillicothe, Missouri (population 10,000) on blacktop State Road V. Modern 2 story 7 room house with bath and half bath, basement, coal stoker furnace, city water, electricity. Your inspection invited. See, write or call EDGERTON REEVES, Citizens National Bank, Chillicothe, Missouri. Phone No. 1 or 303. 18-2

FOR Sale: One of Northern Wisconsin's finest stock farms 250 acres, on river; 3 miles from county seat. Adjacent to Federal highway and good school. 185 acres in cultivation, wonderful soil, balance wood lot with merchantable timber. Good large house, machine shed, hog house, double 64-ft. cornerib, 40x120 2-story barn, 2 silos, milk, tool and pump house. All in excellent repair. Will sell on easy, long terms to right party at less than building replacement cost. A wonderful opportunity for right party. Write or call H. E. BECKWITH, Chetek, Wis.

160 ACRE farm, near Elkhorn. Two cement silos, drive-through barn, milk house, combination hog barn and corn crib, large hen house, 2 good machinery sheds, nine room modern home, orchard. Immediate possession. Many other choice farms. THORNTON REALTY CORP., Elkhorn, Wis. Parkview 3-3260. 18-2

SILOS

STOP top ensilage spoilage. Hundreds of farms testing this Polyethlyn silo cover prove: You needn't waste a forkful. More than pays for itself the first year. Ideal for grass or corn silage. Special Offer, 12' and 14' silos, $8.95; 16' - $9.95; post paid. Covers and liners for pit and trench silos. Prices by request. PLASTIC SILO COVER CO., Northfield, Minnesota. 14-5

FARMS FOR RENT

600 acre highly productive and modern dairy farm with fine buildings, near Chicago. Opportunity for ambitious dairy farmer with sufficient capital to operate on a large scale. Stock and equipment can be purchased at valuation. Write BOX 784, care Hoard's Dairyman, Fort Atkinson, Wisconsin. 17-2

MARCH 1st, 400 acres, 60 milkers, 40-60 or 50-50. Lafayette County, Wisconsin. BOX 759, care Hoard's Dairyman, Fort Atkinson, Wisconsin. 17-spl

CENTRAL California Dairy, 90 registered Holsteins, 75 heifers, 200 acres pipeline irrigated, 300 tons alfalfa hay, 600 tons ensilage on hand. Grade A contract, 2 dwellings. Buy cows and equipment, lease the land. F. C. PAXTON, LeGrand, California. Phone 59V3.

FOR Rent—Large Dairy Farm in northern Minnesota. All buildings practically new. One large barn with 109 stanchions equipped with running water and electric ventilators, also modern barn cleaners. Three large silos filled with choice ensilage and approximately 5,000 bales of hay in barn. Must be seen to appreciate. References required. Write or phone for appointment to H. M. PETERSON INSURANCE CO., Hutchinson, Minnesota. 16-3

SALESMAN WANTED

EXCELLENT side line. Product for salesmen calling on creameries and distributors of dairy products. Low priced, fast moving, repeat item. Excellent earnings to man with any following. All replies confidential. Write: SALES MANAGER, 1316 So. 6th St., Minneapolis 4, Minnesota. 18-2

HELP WANTED

WANTED—Man to run 160 acre dairy farm near Detroit. Up-to-date buildings, equipment, etc. Grade Guernseys, share arrangement with opportunity for competent man to obtain interest in herd. Application must give outline of experience, family, etc. BOX 765, care Hoard's Dairyman, Fort Atkinson, Wis. 17-2

WANTED: Experienced dairyman to operate modern milking parlor and assist with herd management—80 cows—2X milking—roughage self fed. Excellent working conditions, modern house. CONNER PRAIRIE FARMS, R4, Noblesville, Indiana.

DAIRYMAN—Married, experienced Surge milker. Wage expected, availability, reference, age. BERGIN DAIRY, Fallon, Nevada. 18-spl

WANTED—Single man experienced machine and hand milking. Modern Jersey farm located in East. Top wages. BOX 667, care Hoard's Dairyman, Fort Atkinson, Wisconsin. 8-*

HELP WANTED

MARCH 1st. Married man with help for dairy farm, Lafayette County, Wisconsin. BOX 760, care Hoard's Dairyman, Fort Atkinson, Wisconsin. 17-spl

PLANT manager: Dairy and Ice Cream Company desires agriculture graduate with dairy major. Maximum salary. In replying please give complete work history. K. C. BOND & EMPLOYMENT CO., 301 Columbia Bank Building, Kansas City, Missouri. 18-2

MARRIED man to milk 45 cow herd. Cincinnati, Ohio milk area. House, vacation, insurance, etc. M. B. WEAS, Burlington, Ky. 18-3

DAIRY farmer: With enough family help to farm 157 acres northeastern Illinois. Modern house, $300.00 month and bonus. Write full details. BOX 756, care Hoard's Dairyman, Fort Atkinson, Wis. 17-2

WANTED: Single or married man about 50 or over, without children, who would like to live in south Florida and have steady employment, helping owner operate small dairy. Must be good machine operator, honest and trustworthy. Furnished small house with all utilities, $150.00 per month starting salary. E. W. PALMATIER, Box 484, Ops Locka, Florida.

WANTED: Farmer, married, well trained working manager for large dairy farm in Michigan. 6 stall milking parlor, self-feeding hay and silage. Must be thoroughly experienced with feed and general care of 200 registered Holsteins, 100 milking cows, two time milking with full time assistance. Write previous experience, age and family. All replies confidential. BOX 767, care Hoard's Dairyman, Fort Atkinson, Wisconsin.

HERDSMAN wanted for large dairy farm located near Waukegan, Illinois. Excellent living and working conditions. Contact DENNIS GENT, 111 N. Wabash Avenue, Chicago 2, Illinois. Phone Financial 6-2461.

WANTED: Herdsman, experienced, no field work, single, 35 to 50. State references and wages expected first letter. Room, board, laundry furnished. Must have car. LEONARD PUNG, 4629 N. East Street, Lansing, Michigan.

FAMILY to operate small poultry-hog farm along with truck crops. Plenty of water. Ideal climate year around. Modern 2 bedroom home furnished. Salary plus commission. DR. H. GRADY YOUNG, Thomasville, Georgia.

WANTED: Working herdsman. Married, good habits. Must be experienced with purebred Holsteins. College or grant school graduate will be given preference. References required. Farm located on eastern shore of Maryland. Towns nearby with schools and churches. School bus stops at farm lane. Modern, attractive seven-room house. Modern barn. Good salary and excellent working conditions. BOX 768, care Hoard's Dairyman, Fort Atkinson, Wisconsin.

CALIFORNIA coast dairy wants responsible married man to help milking about 150 cows and for all around dairy ranch work. Good salary and good home. BOX 769, care Hoard's Dairyman, Fort Atkinson, Wisconsin.

AUCTIONEER SCHOOLS

LEARN auctioneering, terms, soon. Free catalog. REISCH AUCTION SCHOOL, Mason City, Iowa. 23-*

LEARN auctioneering. Term soon. Write for catalog. MISSOURI AUCTION SCHOOL, Box 8425D4, Kansas City, Missouri. 9-*

SWINE

FOR Sale—Choice 8 to 10 week old Wisconsin feeder pigs, $10.00 each. CLARENCE ACKER, Middleton, Wisconsin. Phone 2569-6. 17-*

NUTRIA

RAISE Nutria for profit. Write HENRY M. TURNER, Route 1, Xenia, Ohio.

RABBITS

RAISE Angora, New Zealand rabbits on $500 month plan. Plenty markets. Free details. WHITE'S RABBITRY, Mount Pleasant, Michigan. 18-*

DOGS

GENUINE English Shepherd and Collie Pups. Healthy and strong. Guaranteed heelers. Year's trial. Choice of sex. Spayed females a specialty. Priced right. CLOVERDALE KENNEL FARM, Ackley, Iowa. 18-*

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SHEPHERDS, Collies, outstanding heelers, watch dogs. ZIMMERMAN FARMS, Flanagan, Ill. 5-*

SPORTSMEN—World's Largest Kennel offers 500 Pointers, Setters, Straight Cooners, Combination Hounds, Rabbit and Squirrel Dogs, Beagles, Fox and Wolf Hounds. Trial. Prices reasonable. Catalogue free. SMOKEY MOUNTAIN KENNELS, Cleveland, Tenn. 15-10

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TRY us once! Fast service! Top quality: 8 enlarged dated prints from your roll 25c; 12-35c. (Trial offer). Reprints 4c. Kodacolor specialists: Roll developed 90c; prints 32c each. Free mailers. WILLARD STUDIOS, Box 2553T, Cleveland, Ohio. 15-4

FAHFOLD Fotos—Now by mail. Roll developed, 8 brilliant enlargements in album form, all for 25c coin. MAIL-PIX, Dept. H, Box 7100, Elkins Park, Pennsylvania. 9-*

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FREE—Big new wholesale catalog! Up to 50% saving for you, family, friends on nationally-known gifts, jewelry, toys, appliances. Christmas cards, etc. Also make money selling part time! Write: EVERGREEN STUDIOS, Box 846-BC, Chicago 42, Illinois. 15-8

BUY Wholesale! Save 66-2/3%! Appliances, furniture, jewelry, toys, sporting goods, tools. Free catalogs. NATIONAL BUYERS SERVICE, Box 3338D5, San Francisco. 17-8

MORE SPECIAL OPPORTUNITIES ON NEXT PAGE

SEEDS AND PLANTS

CERTIFIED Strawberry Plants—Early fall shipment — Superfection Everbearing 100-$3.75; Gem, Streamliner Everbearing 100-$2.50; Dunlap, Blakemore, Armore, Premier, Bellmar, Giant Robinson, Fairland, Vermillion, Wisconsin 214, Tennessee Beauty 100-$1.50; 500-$6.75; 1,000-$13.00. 10 Concord or Caco Grape $1.50. 10 Heavy 2-year Thornless Boysenberry, Latham, Cumberland or Sodus Raspberry $2.00. 15 Mammoth Rhubarb or 40 Washington Asparagus $1.00. 4 Chipman Seedless Red Rhubarb $1.75. Free Fall Catalog. THE RIDER NURSERIES, Farmington, Iowa. 17-4

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Buying U. S. Bonds

MISCELLANEOUS

NEED stationery? You will like our livestock illustrations. We will print your order with your own breed on it. Write for stationery circular. HOARD'S DAIRYMAN, Fort Atkinson, Wisconsin. 20-*

THE Farmer Gives Thanks, by Samuel R. Guard. Attractively printed, The Farmer Gives Thanks —56 prayers in the language of the farmer—speaks to the special needs of farm people and offers thanks for blessings often taken for granted. It may be used in many ways—the prayers may be read aloud for Sunday school or other worship services; for 4-H, Home Demonstration clubs, or any other meeting where prayer is offered. The book is equally suitable as a gift. Available at all bookstores or from your religious supply house. Paper, 50c; Cloth, $1. Published by ABINGDON PRESS.

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DAIRY CATTLE CONGRESS

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* NATIONAL BELGIAN SHOW
* MID-WEST INDUSTRIAL EXPOSITION
* MID-WEST HORSE SHOW
* COMPLETE GARDEN AND FLOWER SHOW
* WOMEN'S AND GIRLS' DEPARTMENT

THE SHOW HAS SOMETHING FOR EVERYONE. Every farmer and his family will find interesting attractions to fill their day. Twenty-six major buildings will be filled with the latest innovations in agriculture and the most recent discoveries to lighten and brighten the tasks of the homemaker. A complete youth program is also a part of the show.

ENTERTAINMENT. And to top off this year's show of national champions, there will be the beautiful and thrill-packed Hippodrome Program each afternoon and evening—the famous livestock parade of champions, a complete saddle horse show and the finest acts from stage, screen and the former Ringling Brothers Circus.

THIS YEAR SEPT. 29 - OCT. 6 WATERLOO IOWA

One of 100 reasons why

. . . discriminating breeders from Coast to Coast, in 40 states, have adopted the ABS Proved Sire Breeding Program for their herds.

These men, purebred breeders, grade herd owners, and commercial milk producers alike, who discriminate between bulls that have proved their ability to sire the kind of cows they must have to succeed in their businesses, and mediocre proved bulls or young bulls with high hopes, recognize, in the ABS Proved Sires, their best bet for future success. That's why about 1,000,000 cows are being bred to ABS Proved Bulls this year.

SENRAB PRINCE'S MONARCH
(Photo at 11 Years)

"Senrab" is but one of 100 ABS Proved Bulls presently in service. He, like his contemporaries, has proved that his daughters have:
(1) The large size and capacity necessary to high production.
(2) The dairy character necessary to efficient conversion of large quantities of feed into big milk checks.
(3) The mammary systems necessary to withstand the strain of continued high production.
(4) The constitutional vigor to make them durable—long lasting; and
(5) The body type to make them attractive.

These men have witnessed either their own successes with ABS or those of their neighbors. They have seen the difference these ABS Proved Bulls make in building a good herd. Each ABS Proved Bull is a PROVED HERD BUILDER. Isn't it only logical that he can help build a herd for you?

Have YOU tasted the fruits of SUCCESS WITH ABS?
If not, now's the time to start.

ABS AMERICAN BREEDERS SERVICE
Often Imitated Never Equalled

FOR YOUR SUCCESS — USE ABS
AMERICAN BREEDERS SERVICE
325 N. WELLS ST., CHICAGO 10, ILLINOIS
Always looking for Great Proved Bulls & Top Technicians *Serving Breeders in 40 States*
Studs at: Carmel, Indiana; Madison, Wisconsin; Palo Alto, California.

New York feed costs vary from $1.54 to $2.44

The spread in feed costs may well be the difference between profit and loss on many dairy farms. A recent study of New York dairy herd improvement associations shows a wide variation in feed costs in producing a hundred pounds of milk.

For one group of dairymen (whose production per cow averaged 12,590 pounds of milk) the feed cost to produce 100 pounds of milk was $1.54.

Another group whose production per cow averaged 10,710 pounds had a comparable feed cost of $1.92.

The lowest-producing group (averaging 8,480 pounds of milk per cow) had feed costs of $2.44 per hundred pounds of milk produced.

The difference between the high and low groups was 90 cents for every hundred pounds of milk produced. Feed itself accounts for about 50 per cent of the total cost of producing milk, says Professor James D. Burke of Cornell's animal husbandry department.

Burke explained: "Low feed cost per hundred pounds of milk is the result of high production per cow, relatively low feed cost per cow, and feeding each cow balanced rations according to her needs."

Another way to look at it is to compare the milk production with the labor force — or milk per man. Here again the study showed striking differences, with some farms much more productive than others.

The high group of dairymen produced 271,000 pounds of milk per man. The lowest group averaged 109,000 pounds per man, not even half as much.

As Burke says, "milk production per man is determined by production per cow, cows per herd, and cows per man."

He pointed out that D.H.I.A. records indicate that production per cow can be increased to 12,000 or more pounds of milk through better feeding, herd management, and breeding. The state average of all cows has been increasing at the rate of 60 pounds a year, and the D.H.I.A. averages 90 pounds yearly.

The amount and quality of roughage grown on New York farms is the most limiting factor on this rate of increase, Professor Burke said.

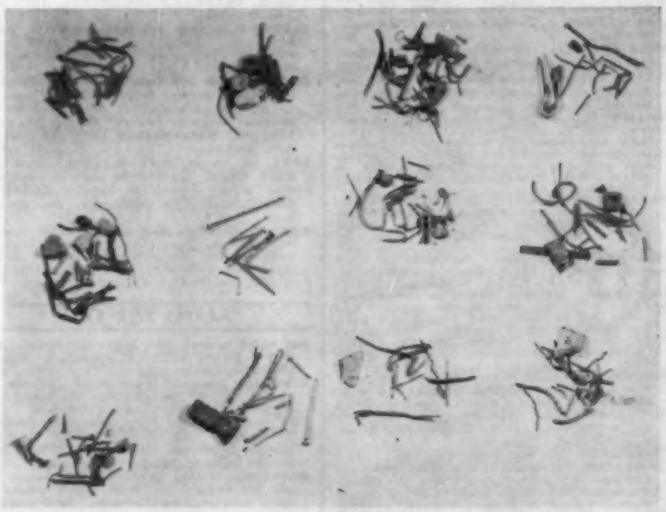
Moist ear corn equal to dry grain

Favorable results were obtained in an experiment in which moist ear corn silage was substituted for dry grain mix according to researchers from the Ohio Agricultural Experiment Station.

The findings of this experiment, conducted by A. D. Pratt and C. F. Rogers, were reported at the annual meeting of the American Dairy Science Association.

The two scientists reported that with both heifers and milking cows, the replacement of dry grain mix by moist ear corn silage on a dry matter basis resulted in equally satisfactory physical condition, weight gains, and milk production.

Cows are walking junk yards



It is the nature of a cow to do little chewing of her food at first, and then later at her leisure regurgitate and masticate her food thoroughly (chewing the cud). This procedure allows many hard objects to be swallowed which later may cause trouble. Most of them lodge in the second stomach.

At the Vermont agricultural experiment station, we slaughtered 50 mature cows for mineral analyses and during the supervision of this work, the writer collected the hardware from each cow as found in the second stomach. Samples from 12 of the animals are shown in the illustration.

In most cases these metal objects merely lie at the bottom of the second stomach and do no harm. Occasionally, however, the longer, sharper pieces, such as baling wire, pierce through the stomach walls and enter the heart. The cow then becomes lame as any exertion causes pain. Later her appetite fails and eventually she dies. Two of our animals became so lame they had to be slaughtered. Long pieces of baling wire were found to have pierced the heart leaving a calloused groove where the organ had beat back and forth against the sharp wire.

Some practices are now being followed which should lessen the trouble from this "hardware disease". Magnetic devices are used to remove metal from concentrates and twine is used to a great extent in place of wire in baling hay and straw.

Farmers should also pick up any scrap metal lying around, tighten any loose bolts on stanchions or gates, and drive in firmly any protruding nails or staples on fences. —J. A. NEWLANDER.

Sales Announcements

September 26 — Holsteins. Eleventh Annual South Dakota Sale, Sioux Empire Fairgrounds, Sioux Falls, South Dakota, South Dakota Holstein Breeders' Association, R. A. Cave, Secretary, Brookings, South Dakota.

September 27 — Ayrshires. Illinois Ayrshire Breeders' Annual Sale, Bureau County Fairgrounds, Princeton, Illinois. 45 head. Donald Oldham, Secretary, E. H. Darnewitz, President, Algonquin, Illinois.

September 27, 1956, 1:00 p. m., DST—Holsteins. Auction of 125 head. 3 miles north of St. Thomas, Ontario, and 2 miles south of Glanworth, Ontario. Shore Holsteins, Ltd., Sale Managers, Glanworth, Ontario, Canada.

September 27—Holsteins. Wisconsin Harvest Special Sale, Sale Pavilion, Waukesha, Wisconsin. 85 head. W. L. Baird Company, Sale Managers, Waukesha, Wisconsin.

September 28—Holsteins. Missouri State Holstein Sale, St. Charles, Missouri. 50 head. Missouri Holstein-Friesian Association, T. A. Burgeson, Sales Manager, Grandview, Missouri.

September 28—11:30 A.M.—Brown Swiss. Sandwich Brown Swiss Sale, Sandwich Fairgrounds, Sandwich, Illinois. 66 head. Norman E. Magnussen, Brown Swiss Sales Service, Lake Mills, Wisconsin.

September 28, 11:30 A.M. — Holsteins. L. A. Markham Estate Dispersal, Rock County Fairgrounds, Janesville, Wisconsin. 65 head. Piper Brothers, Sale Managers, Watertown, Wisconsin.

September 29, 12:00 Noon — Ayrshires. T. B. Warner & Sons Ayrshire Dispersal, 3 miles east of Silver Lake, Indiana. 70 T. B. Warner & Sons Ayrshire Dispersal, Pennsylvania.

September 29 — Guernseys. Michigan State Guernsey Sale, College Livestock Arena, Lansing, Michigan. 60 females, 3 bulls. Sponsored by Michigan Guernsey Breeders' Association. Delbert H. Kingston & Associates, Box 404, Cary, Illinois.

October 8, 1956—Jerseys. Ralph E. Cope, Jr. Dispersal. 70 head. Pacific International Livestock Exposition Building, North Portland, Oregon. J. F. Svinth, Sales Manager, Salem, Oregon.

October 1—Holsteins. Fall Fashion Sale, 7 miles north of Watertown, Wisconsin on highway 26. Francis Darcey & Sons, Sale Managers, Watertown, Wisconsin.

October 5, 12:30 P.M.—Jerseys. Everette Davis Herd Dispersal, plus 16 head from Russell Sheckler herd. OakKnoll farm, southeast edge of town, Fairfield, Iowa. Ivan N. Gates, Sale Manager, West Liberty, Iowa.

October 6, 12 Noon—Ayrshires. 15th New York Production Sale, Fairgrounds, Cobleskill, New York. Tom Whittaker, Sales Manager, Brandon, Vermont.

October 6—Guernseys. Fred Sy Dispersal, Manitowoc County, 5 miles west of Valders, Wisconsin, on highway 151. 62 Registered head. Vince Hanson, Auctioneer, Rural Route #4, Manitowoc, Wisconsin.

October 6, 12 Noon—Holsteins. 11th Annual Olmsted County Quality Sale. 70 Registered head. Minnesota Sales Company, Box 948, Rochester, Minnesota.

October 8, 11:30 A.M.—Brown Swiss. Hi-Fli Farm Dispersal, Pekin, Illinois. 50 head. Norman E. Magnussen, Brown Swiss Sales Service, Lake Mills, Wisconsin.

October 15, 10:30 A.M.—Holsteins. C. J. Rieck Dispersal, Elkhorn, Wisconsin. 42 head. Thornton Finance Corporation, Elkhorn, Wisconsin.

October 13, 12:30 P.M.—Ayrshires. 10th Annual Minnesota Ayrshire Sale, Steele County Fairgrounds, Owatonna, Minnesota. 60 head. Walter H. Klaus, Secretary, Farmington, Minnesota.

October 15—Guernseys. Minnesota State Guernsey Sale, Brandtjen Farms, Farmington, Minnesota. 50 head. L. V. Wilson, Secretary, Minnesota Guernsey Breeders' Association, Rural Route #1, Owatonna, Minnesota.

October 17, 12:30 P.M.—Holsteins. Dane County Holstein Breeders' Association. 17th Annual 4-H-FFA Blue Ribbon Bull and Heifer Sale. Stoughton, Wisconsin Fairgrounds. B. J. Connors, Frank E. Cairns, 353 West Johnson Street, Madison, Wisconsin.

October 20, 11:00 A.M.—Holsteins. Ed Sikes Dairy Ranch Dispersal, northwest of Delavan, Wisconsin. 120 head. Thornton Finance Corporation, Elkhorn, Wisconsin.

October 20—Brown Swiss. Joseph Stefl Dispersal, Cornell, Michigan. 71 head. Norman E. Magnussen, Brown Swiss Sales Service, Lake Mills, Wisconsin.

BROWN SWISS

What Makes a DAIRY BREED

America's leading farm dairymen, livestock breeders, and dairy officials of agricultural colleges are today universally agreed on two facts which have greatly affected the development of the Brown Swiss breed, and always will so affect it.

These facts are:

(1) **The usefulness of any dairy breed is determined by how well that breed meets the demands of the American system of agriculture.**

(2) **Any breed of livestock to remain useful must be hardy, rugged, long-lived, and capable of reproducing its kind.**

To a remarkable degree the Brown Swiss meet these requirements of a useful breed of cattle.

For more information about the breed write:

BROWN SWISS ASSOCIATION, Beloit, Wis.

BREED TO BUTLER

HYCREST BUTLER

Frozen semen is available from HyCrest Butler for your best cows. Butler was Grand Champion at New York and Eastern States in 1954, and Reserve Grand at Waterloo and Chicago in 1954 and 1955. His first ROP daughter made about 540 lbs. fat-2x-2yr. He sired the Junior Champion Female at New York, 1955. Write for further information to:

HYCREST FARMS, P.O. Box 366, Leominster, Mass.

REGISTERED BROWN SWISS AT AUCTION

SANDWICH BROWN SWISS SALE

Sandwich Fairgrounds, SANDWICH, ILL.

Friday, September 28, 11:30 A. M.

66 HEAD — 6 BULLS — 60 FEMALES

Consignments from six states, including a service aged son of an Excellent cow from Lee's Hill Farm. Many heavy producing cows and nice typed heifers.

HI-FLI FARM DISPERSAL

R. A. HIESER and RUSSELL FLIER, Owners
PEKIN, ILLINOIS

11:30 a. m., Mon., Oct. 8, 1956

50 HEAD — 2 BULLS — 48 FEMALES

Thirty years of breeding for big lifetime producers. One of the best herds to sell in this area in years.

JOSEPH STEFL DISPERSAL

CORNELL, MICHIGAN (Upper Peninsula)

Saturday, October 20, 1956

At the farm on County Road 426 northwest of Escanaba

71 HEAD — 1 BULL — 70 FEMALES

40 cows—nearly all fall freshening
5 bred heifers—24 yearlings

The Stefl's are retiring after 36 years of developing this herd on one of the best farms in the Upper Peninsula of Michigan.

THE IMPERIAL SALE

WAUKESHA, WISCONSIN

Friday, November 9, 1956

55 HEAD OF THE NATION'S BEST
5 EXTREME TOP BULLS
50 FEMALES OF THE BEST KIND

An annual event on the day following the National Brown Swiss Cattle Breeders' Association's Annual Meeting.

For further information write:

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OWN A CHESAPEAKE

Wonderful hunting companions both afield and in heavy duck marshes. Efficient, willing, hard working. Fine with children. Write for new booklet and name of nearest breeder.

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Greater returns per dairy acre

Jerseys make more profit per acre because you can keep more animals per acre, and because they produce more efficiently. And, Jersey milk brings a premium price.

THE AMERICAN JERSEY CATTLE CLUB
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BRIGHAM JERSEYS

We respect and strive for the awards that measure continuing profit year in and year out. We know of no other Jersey herd with

177 Ton of Gold Award Winners
77 Tested Dams
53 - 100,000 lbs. Milk Producers

Wouldn't YOU feel you were on a much safer profit program if you had pedigrees packed with lifetime award cows? You can select that kind—Male or Female—by writing or visiting

Brigham Farm

ST. ALBANS — VERMONT

Established 1903
ELBERT S. BRIGHAM, Owner

Complete Dispersal

OF THE

RALPH E. COPE, JR.
Registered Jersey Herd
LANGLOIS, OREGON

at the

PACIFIC INTERNATIONAL LIVESTOCK EXPOSITION BLDG.
North Portland, Oregon

on

Monday, Oct. 8, 1956

Consisting of

70 HEAD REGISTERED JERSEYS

including Zinnia's Coralad, Excellent at three years, several of his sons and daughters, bred heifers, and milking cows.

This is the top producing herd in the United States for any breed with an eleven year HIR herd average of 11,181 lbs. milk and 648 lbs. fat on 36 cows. 1955 classification average 87.27% on 44 head.

FOR CATALOGS WRITE

J. F. SVINTH, Sales Manager
1480 N. 24th St., Salem, Oregon

JERSEY DISPERSAL

FAIRFIELD, IOWA

FRIDAY, OCTOBER 5TH

AT OAK KNOLL FARM, S. E. EDGE OF TOWN—12:30 P.M.

44 Head-Production Bred Jerseys
28 Head-Complete Dispersal
of the herd of

EVERETTE DAVIS, CRAWFORDSVILLE, IOWA

4 Times Gold Star Herd—Ton of Gold Cows
1955 Herd Average 13 cows—508 fat, 9,123 milk

Brampton W.R. Lord Clair, V.G. Sr. Superior Sire; Standard Lord Basil, Excellent Tested Sire; and others of note.

Several young bulls—from Excellent & V.G. Dams. Ton of Gold Cows and High Record Cows.

16 Head from Russell Scheckler Herd, Fairfield, Iowa. Gold Star Herd—4 yrs—Herd Average in 1955: 33 cows—10,329 milk, 505 lbs. fat. Breeding identical to Davis herd. (They owned herd sires jointly.)

Choice young cows with high records, 1 bred heifer, 3 select young bulls, one from Tested dam—3-11,484 milk, 601 fat.

Calfhood Vaccinated All T.B. & Bang's Tested

For catalog of sale write:

IVAN N. GATES, Sale Manager
WEST LIBERTY, IOWA
Auctioneer, Warren Collins, Josup, Iowa

GOLDEN SUNSET JERSEYS—Wonderful bull calf, born November 19, 1955. Sire's dam 16,363 lbs. M., 755 lbs. F. His three nearest dams 13,635 M., 704 F. Five out of seven nearest dams 13,790 lbs. M., 740 lbs. F., 3 nearest dams to dam's sire 13,860 M., 757 F., next sire full sister 12,278 M., 617 F., as three-year-old. His tested dam 13,286 M., 672 F. Price $250.00. A real bargain. **The Ennis Jersey Herds, Festus, Missouri.**

BRYN MAWR FARM offers . . . **"Volunteer Eminence," a five-star, eleven months son of Volunteer Ramblingleaf Gold, Silver and Superior Sire, out of a daughter of "Pixy President," Superior Sire.**
For details write

FRANK B. ASTROTH, Rte. 1, Farmington, Minn.

Pixy's Tristram Noble

The best records of the three nearest dams of this young son of our senior herd sire average 12,247 lbs. milk, 680 lbs. fat, 305, 2x, m.e. basis. His full sister milking at 40 lb. as a 2-year-old. "Noble" is a very nice individual. For sale at a reasonable price.

CHAS S. KELLY, Pixy Farm — **DAVID KELLY, Hudson, Wisconsin**

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THE STARTING POINT FOR DAIRY PROFITS

Choice heifer and bull calves rich in the blood of Carefree Diamond Jim, Double Approved. Also polled bull calves out of daughters and granddaughters of Diamond Jim. All calves from classified and official herd test dams. Write for pedigrees and prices.

CAREFREE FARMS
"Traditionally The Best" — NEW HAVEN, IND.

10TH ANNUAL

MINNESOTA AYRSHIRE SALE

Steele County Fairgrounds — Owatonna

SATURDAY, OCT. 13, 12:30 P. M.

60 HEAD

For catalog write: Walter K. Klaus, Secretary, Farmington, Minnesota.
Minnesota Sales Company, Rochester, Minnesota, Clerk.

FOR SALE—20 Ayrshire cows and heifers of Penshurst breeding.

The cows have records up to 456 lbs. of fat. The cows are bred to a son of Neshaminy Kismet, a Double Approved son of Neshaminy Kingfish, with 75 daughters averaging 9661-4.3-414. These records were made in 305 days on 2x.

FOREST EWERS & SONS
Rural Route #2
Richland Center, Wisconsin

INTERNATIONAL DAIRY SHOW

International Amphitheatre

CHICAGO . . . OCTOBER 6-13

$45,000 in cash prizes

Open and Junior Classes

Ayrshires — Guernseys — Holsteins
Brown Swiss — Jerseys — Milking Shorthorns

World's Championship "GOLDEN SPURS" RODEO
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Order tickets by mail

FINALS!
AMERICAN DAIRY PRINCESS CONTEST
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Write for Premium List
INTERNATIONAL DAIRY SHOW, Union Stock Yards, Chicago 9, Ill.

AYRSHIRES

Bred for business. Cows that average 10,000 pounds of 4% milk, year after year, under practical farm conditions.

( ) Please send me free literature on Ayrshires.
( ) Please send sample copy of The Ayrshire Digest.
( ) Please send names of breeders near me.

AYRSHIRE BREEDERS' ASSOCIATION
10 CENTER STREET, BRANDON, VERMONT

Name.....
Street.....
Post Office..... State.....

AYRSHIRE BULL CALVES—Last year more Ayrshire bulls were purchased from us than from any other Ayrshire herd in the U.S.A. There is a reason. Write for pedigrees.

STRATHGLASS FARM, Box 71, Port Chester, N. Y.

AYRSHIRE DISPERSAL

SATURDAY, SEPTEMBER 29

3 miles east of Silver Lake, Indiana, 40 miles west of Fort Wayne, ½ mile south of route 14.

70—REGISTERED AYRSHIRES—70

Bang's Certified, T.B. Accredited and Vaccinated. All tested within 30 days. An approved sire sells. Many high-producers, also show ring winners. Several naturally polled animals sell. This is a real dairy herd. Sale at 12:00 Noon. For catalog write:

T. GENE WARNER & SONS
Sanger Sales Service, Lebanon, Pennsylvania

LONG LANE AYRSHIRES

The calves by our Herd Sire WINDROW SILVER CLOUD are coming along . . . and what an exciting lot they are! They are blessed with Ayrshire character galore. And why not? He is by the one and only Storm Cloud of Windrow, and out of a National Class Leader daughter of Penshurst Jim with a record of 15,529 lbs. milk, 601 lbs. fat, 743 lbs. m.e. as a 2 Year Old.

Get Jim Blood Through Using A Son Of "Silver Cloud"

LONG LANE FARM, Marine City, Michigan

AYRSHIRE AUCTION

15th New York Production Sale

SAT., OCT. 6, COBLESKILL, N. Y.
at the Fairgrounds at 12:00 Noon Sharp

• SUPERIOR AYRSHIRES •

Carefully Selected For Type & Production

Because the cows are young and the dams of most of the others have been tested in immature form the production averages below are given on a 305 day, two-time milking, Mat. Equiv. basis.

17 Cows—avg.: 11129 M 4.48% 499 F.
21 First-Calf Heifers—dams avg.: 12198 M 4.21% 513 F. **23 Bred Heifers**—dams avg.: 12128 M 4.38% 532 F. **6 Heifer Calves**—dams avg.: 14674 M 4.30% 632 F. **2 Bulls**—dams avg.: 12593 M 4.79% 604 F.

More than half are by Top Approved sires. It's the Feature Fall Sale offering of the Breed. Eligible for any state. For Catalog write—

TOM WHITTAKER—Sale Mgr., BRANDON, VT.

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FREE! FACTS ON **GUERNSEY PROFITS**

Your future is unlimited, with the Guernsey breed! Write today for valuable free information on Guernseys — including hints for starting your own profitable business, producing and selling nationally-advertised Golden Guernsey Milk.

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602 Main St., Peterborough, N. H.

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PUREBRED
GUERNSEYS

Why not be the proud owner of your own herd sire? We have many out of 700, 800, or 900 lb. dams. Breeding stock you are looking for. State your wants, better yet, come and see for yourself. The World's Greatest Production Herd. Prices reasonable.

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NEED A GOOD GUERNSEY SIRE?

If you are looking for a young sire with good type and production back of him, write for our sale list. We have youngsters for sale at reasonable prices, out of very good female families and sired by Leeside Dairyman, McDonald Farms Mister Dairyman, Dairyman Favorite, or Dairyman Dividend. You will save money if you buy a well bred youngster and raise it yourself.

Write Us Today

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FORT ATKINSON, WIS.

JEFFERSON COUNTY GUERNSEY BREEDERS' ASSOCIATION

Guernseys . . . Registered and Grade Females, All Ages . . . **ALSO BULLS.** Free Service to Buyers or Bought on Order . . . Fort Atkinson, Wisconsin.

GUERNSEYS

Waukesha County can furnish you with most any kind of Guernseys you desire—grade or pure bred. **Lee Burtingham, Reidman, at your service. WAUKESHA COUNTY GUERNSEY BREEDERS' ASS'N, Waukesha, Wisconsin.**

FOR SALE

Registered Guernsey bull. Born August 19, 1955. Dam has 701 lbs. b.f. in 305 days 2x milking, maternal grand dam 130.617 lbs. milk, 7,007 lbs. b.f. Paternal grand dam 114,-980 lbs. milk, 6,710 lbs. b.f. in lifetime. All records made on 2x milking.

Other good bulls and a few females.

LURVEY BROTHERS, Dousman, Wisconsin

GRANDVU GUERNSEYS

Offering select Guernsey bull calves up to serviceable age. **Sired:** by McDonald Farms Pre Melvin, an outstanding type and production Sire. **Dams:** are daughters of the great proved high production Sire, Flying Horse Masters Royal, large, typy, good uddered cows with records up to over 10,000 lbs. milk, 550 fat as 2-yr.-olds, 305—2x milking. **Heifer calves for club work for Sale,** the blue ribbon kind. **The Right kind at the Right price.** Write or come to **GRANDVU FARMS, Wrightstown, Wisconsin.**

PUBLIC AUCTION

SATURDAY, OCTOBER 6
10:30 A. M.

Located on the Fred Sy farm in Manitowoc County, Wisconsin, 5 miles west of the village of Valders on highway 151.

COMPLETE DISPERSAL of the **FRED SY HERD OF 62 HEAD** of **MAXIM LINE BRED REGISTERED GUERNSEYS** 28 cows, 6 bred heifers, 9 open heifers, 18 heifers under 18 months, all daughters of the three-year-old herd sire, Woodacres Majestic Leader, who will also be sold. All cows bred back to him. A wonderful herd in good condition. Not a female purchase in this herd for 30 years.

VINCE HANSON—Auctioneer
Phone Valders 49
RURAL ROUTE #4 MANITOWOC, WIS.

MICHIGAN STATE
GUERNSEY SALE

Saturday, September 29

COLLEGE LIVESTOCK ARENA
LANSING, MICHIGAN

60 FEMALES
3 BULLS, serviceable age

A real producing selection of cows and bred heifers fresh or close up. Backed by popular blood lines and top production. Bulls from Colbydale, Cowham Farm and Lyrene all backed by heavy production.

If you want milk and the kind that pay their way be with us on September 29th.

Sale Managed by
MICH. GUERNSEY BREEDERS ASSOCIATION
and
DELBERT H. KINGSTON AND ASSOCIATES
Box 404 Cary, Illinois

for Catalog write

DELBERT H. KINGSTON & ASSOCIATES

Complete Sales Service . . . Auction and Private Treaty . . . Our listings include Proved Sires, outstanding bulls, cows, heifers. Also a few top show prospects. Fieldmen at your service. **Cary, Illinois —Box 404—Phone: MErcury 9-5531.**

FOR SALE
Bull born March, 1956

Dam made 11201-512 Jr2 305C 2x. On retest Sr4 2x has 8438-396 in 147 days. Sire has high record AR daughters. Sire's dam VG with 2 records averaging 16809-824. From a great cow family. A choice individual. Also well-bred attractive heifers due from late August through December.

TARBELL GUERNSEY FARMS
Smithville Flats, New York

FOREMOST PREDICTION

Voted 3rd most influential sire of the Guernsey breed. Proved one of the greatest production transmitting sires through his sons and grandsons. Our herd is linebred to Foremost Prediction. Breeding animals of both sexes available.

McDONALD FARMS
CORTLAND, NEW YORK

MINNESOTA STATE
GUERNSEY SALE

OCTOBER 15 at Brandtjen Farm

3 miles north of Farmington, Minn., Hwy. 218

50 MINNESOTA TOP GUERNSEYS

Four bulls from high record dams. Also excellent consignments from Iowa, Nebraska, North Dakota, and Wisconsin.

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L. V. WILSON Route 1 GWATONNA, MINN.

Choice registered Guernsey bulls by proven sires, such as HORSESHOE CONRAD ASTERBILT and out of at least 550 pound dams, for sale. Large selection to choose from, serviceable age and younger. Calfhood vaccinated. Bang's free, TB accredited herd. Write or visit us for pedigrees and full particulars.

BRANDTJEN FARMS, Farmington, Minn.

HOLSTEINS

PRODUCTION AND TYPE

We offer a typy young bull born 8-8-55. The sire has 21 daughters in our herd in production with good records. The dam is a cow with real type and consistent production. He is well grown and ready to use. Write for information and prices. Phone 8R10, Graysville.

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HOLSTEINS
GUERNSEYS

Buy direct from farms where top production dairy cattle are raised. Over 300 to select from. Located in "Heart of Indiana's Dairyland," Kosciusko County. Experienced truckers available. Also Shetland ponies.

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Silver Lake, Indiana Telephone 3801-3804

All Breeds of Dairy Cows and Heifers
FOR SALE

Fresh and close-up springers. T.B. and Bang's tested. Deliver anywhere. Come and make your selections. Also nurse cows.

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FRANK LUHRS DAIRY COW MARKET

We have a large selection of high-producing Northern cows on hand.

SOUTH ST. PAUL, MINN. Glenview 1-1456

Choice high grade Jersey, Guernsey and Holsteins. Springers and fresh cows. Some milking be fresh later on. Also bred and springer heifers. T.B., Bang's tested. Also 6-7-8 mo.-old heifers. Calfhood vaccinated. Taking orders now for future delivery. **Claude Thornton, R#2, Box 256, Springfield, Mo.**

11TH ANNUAL
OLMSTED COUNTY
QUALITY SALE

70 REG. HOLSTEINS

Carefully selected from 27 leading herds in one of the Midwest's great Holstein centers.

• 24 Young Cows & 40 Bred Heifers •

Practically everyone calving around sale time or within a month. The cows are of the 400 and 500-lb. caliber and the heifers from high producing dams.

• 6 SERVICEABLE BULLS •

Blue Ribbon bulls from dams with over 500 lbs. fat. One outstanding bull from the Green Bay Reformatory herd.

HIGH QUALITY

Rich breeding featuring Burke and other popular lines. Bang's and TB tested for interstate shipment.

SAT., OCT. 6

12 NOON, FAIR GROUNDS
ROCHESTER, MINN.

LIBERAL TERMS
available to buyers regardless of location.

For Free Catalog Write
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BOX 948 ROCHESTER, MINN.

BULLS

Production: Dams—up to 19,300# milk and 723# fat 2x. Sires—with dam—33,343# milk 4.0% 1362# fat. Also lifetime of over 200,000# milk and six year average of over 1000# fat. His sire—Excellent and All-American.

Type: Dams—classified up to 89 pts, many VG and high GP. Bulls themselves are outstanding.

Age: From baby calves up to 16 months.

Prices: $150.00 and up and GUARANTEED TO SATISFY.

Write for our bull list. We will have a bull that will fit your needs and also your pocketbook.

THE ELDONON HERD Harvard, Illinois
DONALD W. JOHNSON

EUREKA FARMS

Has some real Holstein bulls 2 to 12 months old. All sired by our Carnation Plunderer, a son of Carnation O Boy. Our dams have been in DHIA test since 1917.

C. E. HURLBERT Stockton, Ill.

We have been telling you about **ART-JEN FOBES KING**, our Excellent, Grand Champion bull. He is Silver Medal Type already. His first H.I.R. proof, just received, shows: 12 daughters averaging 13,187 Milk, 3.84% Test, 506 Fat. So we expect further honors as more daughters finish. Some good sons on hand and due.

PAGANOK FARMS
Scott Meyer & Son Hannibal, Missouri

It Will Pay to Come a Long Way to
Missouri State Holstein Sale

St. Charles, Missouri *(near St. Louis)* **Friday, Sept. 28** **11 O'CLOCK C. S. T.**

50 SUPERLATIVE HAND PICKED HEAD
from Missouri's Best Herds (all fresh or heavily springing)

SOME SAMPLES:

—Son of 770 lb., V.G. cow: twin bred heifers, 611 lb. dam—Clyde Hill.
—Very Good, 566 lb. cow, Ex. 776 lb. dam; 3 dtrs. Art-Jen Fobes King, Ex., S.M. Type—Pakanok.
—522 lb. (2 yr.) dtr. of "Progressor Rock"; 3 yr. old making 600 lbs. —Vander Feltz.
—3 yr. old dtr. "Fobes Triune", from 1st 3 yr. old State Fair—Selken.
—Bred heifer "Get" from Colanthus Monogram Lochinvar—Carpenter.
—5 good ones rich in "Burke" blood—Schonhoff.
—2 good dtrs. Paganok Admiral Nig, 2922 M., 69 F., on 415 lb. dams —Heimsoth.
—2 close up to All-American, "Ramona"—Hartman and Chandler.
—2 bred heifers with 496 and 565 lb. dams—Casey.
—A 489 lb., two year old—Blohm.
—A complete bred heifer "Get" from Farmington Clyde Hill Rock—State Hospital No. 4

ALL PRODUCTION TESTED; ALL HEALTH TESTED; MOSTLY CALFHOOD VACCINATED

MISSOURI HOLSTEIN-FRIESIAN ASSOCIATION

T. A. Burgeson Sales Manager, Phone: Edison 1-3942 Grandview, Missouri

CARNATION HOMESTEAD REVELATION
Excellent and Gold Medal

We offer a son of Revelation from a cow with 90,133 lbs. of milk, 3,492 lbs. of fat in the first five lactations.

Here is an unusual herd sire prospect. A son of "Excellent" Gold Medal Carnation Homestead Revelation from a member of the great Spofford family. The Spoffords have long been noted for heavy production, long life and outstanding breeding efficiency.

His dam is a daughter of Carnation Ensign from a daughter of Governor of Carnation. She has 90,133 lbs. of milk, 3,492 lbs. of fat in her first 5 lactations, (four 365 day and one 305 day lactations). She now has over 11,000 lbs. in the first 166 days on her sixth lactation giving her over 100,000 lbs. to date. These records have all been made standing in stanchion with just ordinary care.

He is Ear Tag B-305 born February 14, 1956. Let us tell you about this calf and the great family back of him.

WRITE FOR PEDIGREE AND PRICE.

Carnation Milk Farm

Address:
CARNATION MILK FARMS
Dept. Z-90
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HOLSTEINS -- GUERNSEYS

Good selection young heavy producing close-up or springing cows and choice springing or fall freshening dairy heifers. Direct farm purchases carefully selected for quality, type and production, T.B. & Bang's Tested. Private daily sales and orders conscientiously filled. Reasonable prices and delivery rates gladly quoted. Buy with confidence from Ohio's Oldest Licensed & Bonded Dairy Cattle Distributors. 107 years of continuous operation.

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WAUKESHA DAIRY CATTLE SALES & SERVICE

Quality Holsteins

Will be glad to help you. We also buy on order. Write for information.

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P. O. Box 141 Waukesha, Wis.
Phone 63, Dousman, Wis.

C. J. RIECK DISPERSAL

OCTOBER 15 - 10:30 A. M.

Located 7 miles northeast of Elkhorn on highway 15 to D, then first road right, first farm left.

42 Head Registered Holsteins

29 cows and bred heifers, 5 young bulls. Sire: Lawalwis Burke Rag Apple. Herd average 435 lbs. fat.

WRITE FOR CATALOGUE
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THORNTON FINANCE CORPORATION
ELKHORN, WISCONSIN

JEFFERSON COUNTY HOLSTEIN BREEDERS ASSN.

Registered and grade Holsteins available from top DHIA accredited herds, many using artificial breeding. Special offering of heifers bred for fall freshening. Free fieldman's services.

Write, wire or phone for prices.

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Holstein Cows and Heifers

If you're looking for cows or heifers come to Dodge County where good Holsteins are raised. Buy them first-handed and save expenses. We have 250 head of bred and springing grade and purebred Holstein cows and heifers on hand at all times. Can furnish transportation for any number large or small.

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WISCONSIN HARVEST SPECIAL SALE

SEPTEMBER 27TH
SALES PAVILION—WAUKESHA, WISCONSIN
85 HEAD OF PUREBRED
AND HIGH GRADE HOLSTEINS
several with records up to 500 lbs. of Fat . . . a number of yearling heifers and top herd sires.
W. L. Baird Company Waukesha, Wis.

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Ten Gold Medal sires bred in our herds and a study of the progeny of these sires, discloses that a large number of Gold Medal and high production animals are direct descendants of these great sires.

Linebreeding and continuous testing for production, together with a complete health program removes all doubt if you are interested in improving your breeding program.

Choice young bulls from our best blood lines and from selected production dams, are available at all times.

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Department of Public Welfare
State Capitol, Madison, Wisconsin

For HOLSTEIN COWS and HEIFERS

Grades or Purebreds, come to Dodge County. These cattle are Bang's tested and vaccinated. Bred for type and production. Can furnish transportation for any state. Will also ship on order. Located four miles south of Waupun on highway 26.

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Burnett, Wisconsin Phone Waupun 832R3

Top Holsteins-Top Service

Select well grown cattle of superior breeding from this outstanding dairy area, where customers return year after year for more. You, too, should buy in Richland Co.

C. VICTOR GOODRICH, Fieldman, The Richland County Holstein - Friesian Ass'n, Lone Rock, Wis.
Phone 2340

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in the heart of Wisconsin's dairyland. Eight counties with over 300 purebred breeders. Choice purebred and grades, also good registered service age bulls. Burke and Homestead breeding predominant. Fieldman Service. Write, wire or call G. J. STANGHFIELD, Fieldman, Phone 7545, 39 Champion Avenue, Fond du Lac, Wisconsin.

FALL FASHION SALE

at WATERTOWN, WISCONSIN, MONDAY, OCTOBER 1ST, 7 miles north on Hy. 26, will offer the splendid lot of both Purebred and Grade Holsteins being offered in these monthly sales, including springing and fresh cows and heifers, yearling bulls and heifer calves.

Elmwood Farms, Illinois, consign a yearling son of a 600 lb. 2 yr. old cow and a top springing 700 lb. fat cow.

FRANCIS DARCEY & SONS, Sale Managers
Watertown, Wisconsin

BUILD UP YOUR HERD WITH

Wisconsin Dairy Cattle

Holstein - Guernsey - Brown Swiss

COWS, HEIFERS, ALL AGES
Registered and Non-registered

We have 200 to 300 head on hand at all times. Come here and make your own selection. Or we will fill your order on direction from you and deliver C.O.D. on your approval. All animals T.B. and Bang's free, accompanied by health certificates. Delivered in truckload lots to your farm, in our own trucks, by experienced cattlemen.

JAY SHEAFOR, JR.
Rt. 1, Richland Center, Wis., Phone 1018-W

BUY HOLSTEINS STRAIGHT FROM "THE HEART!"

Best selection from one of the world's largest dairy counties. Over 15,000 cattle are on D.H.I.A. test and more than 30,000 bred artificially from some of the top proven bulls. Also a few serviceable bulls from high record dams. Fieldman sales and service. For information write: Frank E. Cairns, Fieldman, 353 W. Johnson St., Madison, Wisconsin.

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DANE COUNTY HOLSTEIN BREEDERS CO-OP ASSOC. MADISON, WIS.

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Serving five counties. Offering select quality heifers and young cows, grade and registered, bred for type and production. Also choice, serviceable, registered bulls. Mostly Burke and Carnation breeding. Free fieldman service.

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ED SIKES DAIRY RANCH DISPERSAL

October 20, 11:00 A. M., Cattle

Located 3 miles north of Delavan on Route P, then 3 miles west.

120 Head of Holsteins

56 Registered, 64 Grades; 88 Cows and bred heifers included. Herd average 414 lbs. fat.

WRITE FOR CATALOGUE
LIBERAL TERMS
Sale Conducted by
THORNTON FINANCE CORPORATION
ELKHORN, WISCONSIN

WALWORTH COUNTY HOLSTEIN BREEDERS ASSOCIATION

Before buying, see the fine purebred and grade cattle in Walworth County.
Free Fieldman Service
Contact RALPH PETERS
DARIEN, WISCONSIN PHONE 126R3

ROCK COUNTY HOLSTEIN BREEDERS' ASSOCIATION
"GATEWAY to WISCONSIN"

Offering 50 head Registered Holsteins. Males and Females at Fall Sale, October 9 4-H Fairgrounds Janesville, Wis.

For Fieldman Service write to: GEORGE SNYDER, Rte. 2, Clinton, Ph.: Clinton—6-4624.

Tri-County Holstein Cattle Association

Let us help you select foundation Holsteins, both purebred and grade, from herds of known productivity in the finest Holstein area in the country. Orders also filled at your direction.

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Phone 264 or 962IJ1

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BOX 177
WAUKESHA, WIS.

Telephone Liberty 7-3644 or Liberty 2-3726
WAUKESHA, WISCONSIN

Services of—W. L. Baird—Arthur F. Bennett—Don A. Stouffer—James L. Gordon—Reynold Bennett at your disposition.

REGISTERED AND GRADE HOLSTEINS

from top purebred and high grade herds in ten counties—many artificially bred. We service over 700 of the better herds in Wisconsin. At the present time, we have listed over 75 purebred, registered heifers and cows due to freshen this fall; also, a great many high grades. We specialize in truckloads or carloads.

TELL US YOUR WANTS AND WE WILL QUOTE PRICES.

Weber Hazelwood Burke Raven Ex.
Gold Medal Proven Sire

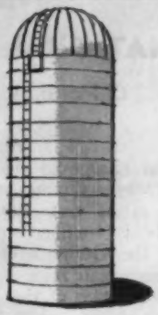
These proven grandsons of the Gold Medal Sire, Wisconsin Admiral Burke Lad, are being used on Burke daughters and granddaughters in our herd, intensifying his inheritance for high production and outstanding type.

Burke-bred bulls and semen available.
Write for pedigrees and terms.

PABST FARMS, INC.
Acc.-Neg. Oconomowoc, Wisconsin

Wis. Leader Ex.
Gold Medal Proven Sire

REGISTERED HOLSTEINS



fit the **FARM**

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The silo and the milk carton tell today's big story about REGISTERED HOLSTEINS.

Get the facts on BIG COW dairying — how to convert big tonnages of forage into more profitable moderate-fat milk — the kind consumers are demanding.

Send 10 cents for this new Holstein-Friesian guidebook, a real help to any dairyman who wants to *make more money.*

Have valuable new facts at your finger tips on making more milk per cow, per acre and per man.

REGISTERED HOLSTEINS
Breed of the Times

Mail this order blank with 10¢ today!

Holstein-Friesian Association of America
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A dime is enclosed to cover mailing and handling cost of the 20-page handbook, "Big Cow . . . Big Profit."

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R.F.D. ..... STATE .....

THE WAYNE QUINTS *admire the shiny new specially equipped Ford Truck* that will take them on an extensive exhibition tour to many Midwestern fairs and dairy shows.*

See the famous

WAYNE QUINTS AT THE

NATIONAL DAIRY CATTLE CONGRESS

Waterloo, Iowa — Sept. 29 - Oct. 6

INTERNATIONAL DAIRY EXPOSITION

Chicago, Illinois — Oct. 7-13

Here's your chance to see the world-famous Wayne Quints — the "five-at-once" calves that happen only once in about 14-million births!

This fall, the Quints have already visited many state fairs. Now, they're headed for two of the Nation's big dairy shows — the National Dairy Cattle Congress at Waterloo and the International Dairy Show at Chicago.

Be sure to see them. They were featured in Ripley's "Believe It or Not" . . . and showed the nation how to drink from nipple pails on the popular "I've Got A Secret" TV Show. They also attracted nationwide attention as thousands and thousands of farm folks took part in a contest to name the lone bull-calf of the group.

In all livestock history, the Wayne Quints are only the third set that have been known to survive. Another set may not be born during the next 3 generations.

Born prematurely

The four heifers and bull were dropped prematurely. They were only 18 inches high and weighed one-fourth the normal weight of Holstein calves at birth. At first, two of the calves gave owner Alfred Gaser of Valley City, Ohio "real concern" because they wouldn't nurse. But he saved-and-raised all five with the help of *Wayne Calfnip Milk Replacer and Wayne Calf Starter.*

At seven days of age, the calves were put on Wayne Calfnip—using nipple pails. That's when they started growing faster than normal calves. Later they were switched to *Wayne Calf Starter* and the sensational gains continued.

At 4½ months of age, the Quints were well on their way to catching up with normal weights. They have multiplied their weights nine times—while a normal calf is expected to increase its weight only three times. At 9½ months they averaged 456 pounds.

See for yourself

See for yourself the calves that were saved and raised on Wayne Calf Feeds. Remember, too, that Wayne Calf Feeds can help you save-and-raise smooth, g r o w t h y calves. Wayne Calfnip looks like milk—but gives up to 20% better gains. Contains a special antibiotic to help prevent scours. Easy to mix . . . stays well in solution.

6-1847R

*For the Fair Circuit, the truck is equipped with an Omaha Standard Body supplied by W. A. Jones & Son, Columbia City, Indiana.

For complete details, see your Wayne Feed Dealer

WAYNE FEEDS

ALLIED MILLS, INC. *Builders of Tomorrow's Feeds Today!*
Executive Offices, Chicago 4, Ill. Service Offices, Ft. Wayne 1, Ind.

VETERINARY COLUMN

E. A. WOELFFER, D.V.M.

Some skin diseases affect animals and man

There are quite a few diseases that affect both animals and man. Included in the list are a number of skin diseases. Pus-producing infections of the skin are seldom directly transmitted from animals to man. The exception to this might be anthrax, actinomycosis, and erysipeloid of swine.

Actinomycosis is a chronic infection of cattle commonly known as "lumpy jaw". The organism responsible for erysipeloid causes a dermatitis (inflammation of the skin) due to absorption of decomposed animal matter by the skin.

Cowpox is a good example of a virus disease which is transmitted from animal to man and which affects principally the skin. The cowpox to which reference is made is known as the genuine or true cowpox. It is not the same as natural cowpox which is seen mostly in the herds in this country. Both types of cowpox are contagious within infected herds.

Parasites such as lice, fleas, and ticks are of no great importance to man as a source of skin disease although lice and ticks may be carriers of systemic virus diseases.

Scabies (mange) is a skin disease caused by several types of mites. Of the mites, the genus *Sarcoptes* is capable of infecting man. It has been said that animal scabies in humans is a short-lived infestation. Judging from a report from England, however, this may not necessarily be true.

The diagnosis in man of scabies from animal origin is not always easy as burrows, vesicles, and blisters are often absent.

Demodectic mange can occur in cattle, sheep, and goats but it is much more common in dogs. This disease is not transmitted directly to man. The mite, however, is often found in some of the secreting glands of the skin. It appears to be a harmless parasite in man.

Unlike the insect parasites, ringworm fungi, which are primarily of animal origin, show considerable adaptability when transmitted from one host to the other. Unlike some of the virus and bacterial infections, no noticeable immunity is built up by man after an attack.

The differential diagnosis of ringworm in animals and man is often difficult. The lesions usually show up as discs where the hair is lost and the surface presents scales and crusts. Broken hairs are found in the bald areas and microscopic examination usually confirms the diagnosis.

Not all fungi attack both man and animals. Because the control of ringworm and other infections transmissible from animals to man is important, close cooperation is necessary by veterinarians, dermatologists, myocologists, and public health workers including epidemologists.

"CASTING OF THE WITHERS"

In your book called, "Common Ailments of Farm Animals", the term, "casting the withers" was used. I would like an explanation of this term, as my veterinarian and I had a discussion on it and he said that he had never heard of the expulsion of the calf bed being called "casting the withers."
Beloit, Ohio **R. E. P.**

"Casting of the withers" is a layman's term for prolapse of the uterus in cows. The term is fast falling into disuse but it is still used to some extent by farmers in some sections of the country.

MASTITIS FLARE-UPS

I have a Jersey cow that has a mastitis flare-up condition which I think is caused by rheumatism. Last winter, everytime she would lie on cold ground on sunny days, she was almost certain to have a caked udder that night.

She improved after I had the local veterinarian give her a shot for mastitis. I also kept her in the barn so she couldn't lie on the cold ground. Now she shows a slight stiffness when she gets up and starts walking.

Can anything be done for her as these flare-ups are frequent? Is there anything I can do for her during her dry period?
Peebles, Ohio **P. D.**

Since the acute flare-ups in the udder of your cow are occurring more frequently, it is an indication that the disease is reaching a more advanced stage. After the cow is dry, we suggest you have your veterinarian treat each quarter of the udder at least twice during the dry period. If destruction of the glandular tissue has not been too great, it is possible for the infected quarter to show considerable improvement during the following lactation.

UDDER SORES

My cows are plagued with ulcerated sores that seem to kill the hide which dries up, forming a thick scab. Later the scab begins to peel away, leaving a raw, foul-smelling sore.

These sores are nearly always located in the hollow, formed by the front quarters, just in front of the udder. The condition seems to be worse with a full udder.

Due to the single location, I believe the sores are caused from an inside rather than an outside source. I have heard that the germ is similar to foot rot.
Durango, Iowa **D. T.**

The infected sores you describe may occur anywhere or anytime when infection enters tiny breaks in the skin. Oftentimes urine or filth predisposes to the infection. Usually the organism frequently found in foot rot is also found in these sores. Other organisms are present, too, and this makes the lesions difficult to treat.

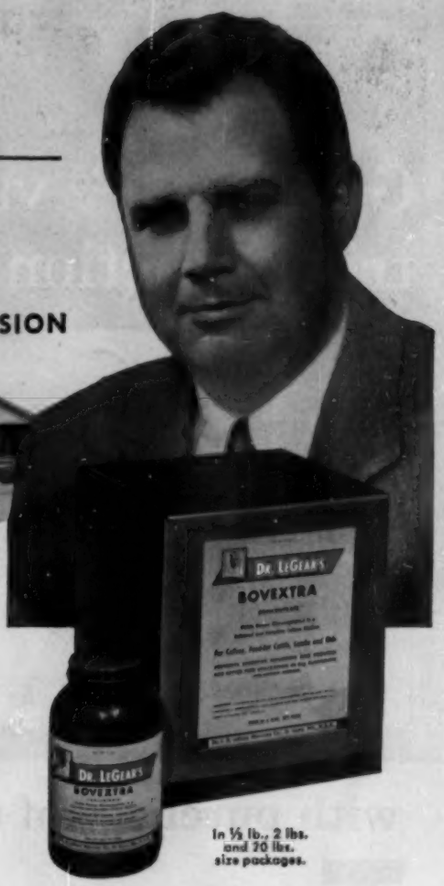
We like to wash up the area with soap and water; dry and then apply suitable ointments or solutions. There are several suitable preparations that may be obtained from your veterinarian. The one we like is called Cerbinol.

Dr. LeGear BRINGS EXTRA PROFITS to FEEDERS . . .

New BOVEXTRA

CUTS MARKETING TIME OVER 25%

SAVES WEEKS OF FEED COSTS WITH FAST, SAFE CONVERSION



In ½ lb., 2 lbs. and 20 lbs. size packages.

From range to full feed in 8 to 12 days . . . that's the record for BOVEXTRA-fed cattle. Dr. LeGear's new scientifically prepared rumen inoculum (the technique featured recently in many University and Farm Journals) makes this swift change-over possible. BOVEXTRA supplies the rumen with billions of tiny living bacteria which aid digestion and stimulate appetites.

When cattle are taken off the range they need extra bacteria to speed up rumen digestion of concentrated feeds. With BOVEXTRA conversion is safe and fast . . . saving you up to four weeks of costly feeding and labor. Better feed utilization results too . . . your cattle show faster growth with greater weight gains.

BOVEXTRA FOR SCOURS

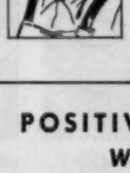
When diet changes cause digestive upsets, BOVEXTRA helps prevent many forms of scours by speeding up rumen function. Slower cattle fatten at a quicker rate so that all animals can be marketed together with greater profits for you. Try BOVEXTRA today . . . test it for one conversion period and see for yourself the amazing results. It's economical too . . . costs just 8¢ per animal per day . . . 64¢ for the change-over period.

Feeders everywhere are writing to us telling of the amazing results BOVEXTRA has produced for them.

A Missouri Angus feeder writes: "I used BOVEXTRA on some baby calves troubled with scours and BOVEXTRA completely checked the scours after the second dose. BOVEXTRA has given me the best results I have ever obtained in this treatment.

"I also recommend BOVEXTRA highly for starting feeder calves. With BOVEXTRA I had my calves on full feed in two weeks and no digestive trouble ever developed. These calves are putting on fast gains, eat heartily and have sleek coats. BOVEXTRA is a real factor in feeding efficiency."

A prominent Illinois feeder finds BOVEXTRA very satisfactory: "I use BOVEXTRA and find it really helps cattle to get on full feed. BOVEXTRA gave me very good results. None of my cattle scoured and all stayed on feed. Incidentally, I had one steer who would not even touch grain until I fed him BOVEXTRA."



POSITIVE MASTITIS TREATMENT
WITH "ENZYME ACTION"

HYPO-ZYME-6

When the "enzyme action" in HYPO-ZYME-6 goes to work, recovery from MASTITIS is well on its way. Powerful antibiotics and sulfa drugs can then reach the source of infection and start the healing process at once. The single shot, disposable syringe is safe, sanitary and speedy to use. Get the "Handy Pack" of 12 from your dealer today!

EASY, SAFE

CALF DEHORNER

Here's the painless economical way to dehorn young calves. Easy to administer, just brush it on. CALF DEHORNER cannot be removed by rain, licking or rubbing. Safe to use. One bottle treats eight or more calves.

For 65 years ethical manufacturers of quality animal health remedies

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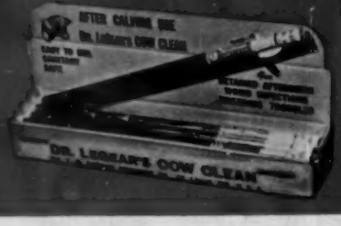

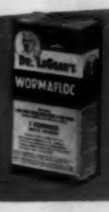

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YOUR FREE OILER IS PACKED RIGHT INSIDE
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FAST-ACTING LIQUID
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ANIMAL FORMULA FOR MASTITIS
SIDE PANEL SHOWS HOW YOU CAN USE THIS PREMIUM TO PREVENT SCOURS IN BABY PIGS
Effective treatment of disease requires prompt, accurate diagnosis. It always pays to consult your veterinarian.

See why this free-flowing liquid gives faster, more dependable results

OINTMENT TREATMENT. Thick, greasy carrier clings to walls of teat canal, often fails to get antibiotic to the pockets of infection that might cause flareups later. Note how it "globs up" in a mass when squirted into a glass of water.

LIQUID TERRAMYCIN. Fast, *even* distribution, provided by Terramycin's free-flowing *liquid* base, gets germ-killing amounts of antibiotic throughout the whole quarter. It cleans out the infection, then milks out clean.

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